The Builder.

VOL. XIV.—No. 702.

DURING the week, we have been requested to give some farther information as to the actual state of the case with respect to the new Westminster Bridge, and willingly comply. On the 31st of March last, the Chief Commissioner of Works and Public Buildings requested Mr. Rendel and Mr. Simpson, engineers, to report to him on the works of New Westminster Bridge. The instructions were in the following terms:—

"The first Commissioner requests that you will report to him on the following points:—

1. The cost of the works up to the date of your report, or as near to that period as you can.
2. The progress which has been made in the work.
3. The time in which the first half of the bridge may be made ready for traffic.
4. The time necessary for the completion of the whole structure, and its probable cost under existing circumstances (also the probable cost of suitable approaches).
5. Your opinion as to the original scheme, and the exact nature of that scheme; and,
6. The desirability of proceeding with it.

Should your opinion be unfavourable to the prosecution of the present plan, I have to request that you will set forth most fully the reasons which induce you to arrive at such a conclusion, and that you will advise as to the course which you think it would be most desirable to adopt, taking into consideration all the various circumstances of the case, and bearing in mind that the object to be attained is to have a bridge of a permanent character."

Their report, dated June 28th, is now printed, and shows, with reference to the first inquiry, that the sum of 76,988*l.* 12s. 9d. had been paid on account of the new bridge up to May 31st, and that the works done, materials delivered, and plant, amount in value to 85,009*l.* 1s. As to inquiries 3 and 4, they consider that the first section now in progress will demand at least eighteen months from the resumption of the works, and the completion of the second section not less than four years from the opening of the first. The cost of completing it, in addition to what has been already paid, they put at 200,000*l.*; and the cost of approaches, including 70,000*l.* for property already belonging to the Bridge Estate, and 170,000*l.* for clearing away the block of houses on the south side of Bridge-street, at 384,800*l.* In reply to No. 5, they describe at some length the nature of the scheme, and arrive at the conclusion that it is defective in many of its details, especially in the construction of its piers below water. As to the desirability of proceeding with it (inquiry 6), they say the total loss which abandonment of the plan would occasion, would be about 42,000*l.* To found the piers of the bridge as now arranged, 85 feet wide, in the clay, and provide a temporary bridge, not contemplated in the present arrangement, would make the cost of the bridge above what has been paid, 304,000*l.* the cost of the approaches remaining the same. They then, however, go on to suggest that a diversion of the traffic is desirable, and recommend the construction of a second bridge from the Horseferry-road to Church-street, Lambeth, 60 feet wide, and the reduction of the new Westminster-bridge to that same width. The cost of this second bridge and approaches they estimate at 415,000*l.* The saving in Westminster-bridge and approaches by the reduction of width, is called 170,000*l.*; and placing this sum to the credit of Lambeth-bridge, together with the estimated cost of a temporary bridge then not required, would reduce the cost of Lambeth-bridge, they say, to 210,000*l.*

Let us look back to the objections which Messrs. Rendel and Simpson take to the present scheme. The new bridge is to occupy the site of the existing bridge, but is to be double the width. The addition, our readers will remember, is wholly on the south side; and this section is being built first in order to avoid the necessity for a temporary bridge, pending the construction of the other half of the new bridge on the site of the old.

"Again: the present scheme is devised with a view to the avoidance of the use of cofferdams or caissons for founding the piers and abutments. This is done by forming the piers below low water of a series of wooden piles, surrounded by a sheeting of cast iron, the space inclosed by this sheeting being filled in with concrete.

With a view to prevent the cast-iron piles being laid bare by the scour of the river beyond a fixed limit, namely, three feet below low water, it is proposed to surround them up to that height with a bank of concrete; and in order to guard the piers, masonry, as well as cast-iron piling, from accident by the fouling of barges, steamers, or otherwise, they are to be protected by floating fenders or booms."

On examination of the mode of construction, they consider that the foundations, on which the permanent character of the bridge will rest, are dependent on the combined action of several classes of materials, differing in their strength, as well as in the manner in which they are applied. Farther, the strength of each part is liable to suffer by the failure of any one, and in especial the fracture or the improper execution of any portion of the outer cast-iron casing might be productive in the end of very serious results. In fact, they say, supposing the principle on which these foundations are constructed to be a sound one, it is one that peculiarly requires a cofferdam; for this alone would ensure that careful supervision which is demanded by a class of work dependent for its permanence on its faultless execution. Again, they think it probable that the bottom of the river would not retain the peculiar form intended to be given to it; and that should this be the case, the concrete banks round the piers must in no long time be broken up, and the piers be weakened, first, by the increase of their unsupported height, and, secondly, by the diminution of the depth and solidity of the material through which the piles of which they mainly consist are driven.

Looking to the changes which have taken place in the bed of the Thames, and the disturbance of it especially at the site in question, in the various attempts to keep up the old bridge, they do not consider that any plan which does not comprise solid stone piers and abutments, carried down deep in the London clay, can be regarded as possessing a "permanent character." Further, that it specially demands the aid of cofferdams, and that the saving of the cost of a temporary bridge is not a sufficient compensation for the trouble, risk, and extra cost of constructing the bridge in two sections, as now proposed. At any rate they say, and justly, that if the present design be carried out, the foundations, masonry, and iron superstructure of the two sections, except the plates which carry the roadway, should be built entirely independent of each other, so as to reduce the consequences of unequal settlements in them, to the least possible evil.*

It will be seen that this is a very serious affair. Mr. Page should have the fullest opportunity afforded him for explanation and demonstration.

* A view of the proposed bridge and details will be found in vol. xii. p. 266.

THE ARCHITECTURAL MUSEUM.

THE annual *conversazione* in connection with this institution, took place on Wednesday evening, at the Museum, in Canon-row, Westminster. The Right Hon. Earl de Grey presided, and there was a very large attendance of visitors.

The chairman, in opening the proceedings, congratulated the meeting on the large assemblage he saw before him, which, he said, was a proof that the institution was increasing in interest, and therefore he hoped increasing in utility. Although it was started under less favourable auspices than many other institutions, it had been steadily progressing. He would not attempt to give any account of what the institution had already done, but would at once call upon the Treasurer to read a statement of the proceedings of the past year.

Mr. Scott (treasurer) read the report, from which we take the following:—

"Our great and primary purpose, and that which embraces all the others, is to promote the advancement of all the branches of decorative art which are connected with, and subsidiary to architecture. It would be worse than idle to attempt any concealment or extenuation of the fact that these arts had generally sunk, in this country, to a *very low ebb*. The inveterate love of cheapness had either banished decorative art altogether from our buildings, or placed it in the hands of a humble class of artizans, whose limited education and means rendered it impossible for them duly to study the arts they were called to practise, and even *their* works being considered too costly, they were rarely used fresh from their hands, but were mechanically repeated by casting or by machinery, till what merits they possessed became nauseating by continual repetition. Painting and sculpture, in their higher branches, had long been severed from their sister art, and the humbler branches, which yet deign to unite themselves with architecture, are of necessity left in the hands of workmen who from time to time emerge through their own talent and exertion from the ranks of the mechanical artizans, and these had no opportunity of visiting and studying works of former periods, nor of perfecting themselves in their respective arts. It was to aid this humble but meritorious class of artists that this museum was founded; and its purposes are to bring together within their reach specimens of the arts of various periods and styles, as carefully selected as our opportunities will permit; and further, to do all in our power, by courses of lectures and other means, to aid and encourage them in the study of what we place before them.

Let it not, however, be imagined that by bringing before them specimens of the arts of former periods, we wish to make these the models on which their own works should be founded. It is absolutely necessary to advancement that the artist should have a reasonable degree of knowledge of the attainments hitherto reached. Without this he has no foundation to go upon; he is ignorant of the levels already attained, and from which his own progress should commence; but once knowing what has been reached, and having made sure his own footing on that level, his motto must ever be 'Excelsior;' and to aid him in building upon the foundation laid by the works of former ages, we are constantly urging, in every possible way, that his own works should not be mere dead imitations of those of the past, but that he should only use them to aid and guide him in obtaining ever fresh supplies of taste and beauty from the fountain-head—the works of nature herself—that museum of art which belongs alike to all ages of the world, and to every family of man."

The progress of the society was referred to, the various donors named, and special reference of course made to the present of 50*l.* from Prince Albert, and to the fact that H.R.H. had consented to become the patron of the Institution.* The report concluded with an urgent appeal to the public for support.

The report having been adopted,—

The Rev. Dr. Wordsworth moved that a vote of thanks be given to the contributors of specimens to the museum, and in doing so dwelt at some length on the proper use to be made of those contributions which had been so liberally bestowed upon them: a great deal would depend upon the view taken by those for whose benefit these contributions had been made. But there must be something besides specimens,—there must be the infusion of a master-mind into them; if they were to be of any use, they must have cast around them something of the dignity of the profession of an architect. When they looked around them in that building, they were, so to speak, surrounded by dry bones, into which it was necessary to infuse a spirit, and make them live, as it were, before them. Casts and moulds would be of little use, unless they were presided over by a genius to regulate their application; for it was a source of great indignation to the true lover of the profession to see the gross misapplications of some of the finest specimens of his art. They sometimes saw casts from the most beautiful portions of sacred edifices abroad, applied to the most secular purposes at home. There was great reason to be alarmed at the prospect of the arts in this country now before us; and unless we cleared up our own views in regard to the application of the specimens such as he saw around him, much

mischief, instead of advantage, would be derived from their misappropriation. He could not too strongly condemn the want of sense and propriety exhibited at the present day in all branches of architecture; and considered, that in order to profit by the institution in which they were assembled, it was necessary to have genius presiding over the whole of it, in default of which, their collection of casts and specimens would be worse than useless. In returning thanks to those who had contributed these specimens, he would express a hope that those upon whom they had been bestowed would prove worthy of them.

Mr. Sydney Smirke seconded the motion, and expressed a hope that the contributors to that institution would not consider the reception they were enabled to give to the contributors as any measure of the gratitude felt; and he looked forward to the time when they would be able to leave the place in which they were assembled for one more fitted for the purpose for which the Institution was founded.

The motion was carried unanimously.

The Chairman said, that having thanked those at a distance from them, for the assistance they had given to the institution, it was their duty to come a little nearer home, and return thanks to those individuals in connection with the Institution without whom they would not have been able to go on at all. They had been kind enough to give their time and their energies to the undertaking, and were entitled to the most cordial thanks of all who took an interest in its success.

Mr. Cole then moved that the warmest thanks of the meeting be given to Mr. Scott, the treasurer, and to the other officers of the museum for their valuable services during the past year. He proceeded to draw a contrast between the new Houses of Parliament and the houses near the Abbey, in that locality, with the extremely humble building in which the architects of Great Britain, who produced that architecture, had thought fit to commence an Architectural Museum. For his own part, he rather approved the contrast; but still he could sympathise with Mr. Smirke in looking forward to the time when they should be in a more commodious and appropriate building. The officers of the institution had been most untiring in their exertion for its welfare and success during the past year; and, as had been pointed out in the report which had been read to them, their exertions had not been without much fruit. Mr. Scott had succeeded in procuring the assistance of Government in their undertaking; and although he (Mr. Cole) was rather averse to accepting such assistance in institutions of that nature as a principle, he considered that we are all so intent upon our own business, and so little disposed to undertake that which is not remunerative, that for some years to come the Government of this country must pay something out of the public purse towards promoting the interests of science and art. He wished it were otherwise; but it was a fact, that the largest amount of support given to the institution came from the public purse, through the hands of the Government, and it would depend very much upon the pressure from without whether that amount of assistance were increased or not. He was disposed to hope that the utility of that institution would become more widely recognized throughout the whole country, and that every art-workman would contribute his one shilling or his five shillings per annum to the support of an institution which has for its object the spreading a knowledge of that art by which he gains his daily bread; and that the very humble institution which they saw within those walls would expand into an institution which would be a credit to Europe. At the present moment he was not aware that there existed in any country of Europe an institution exactly analogous to that. It only required an extension of the spirit which had called together the collection which he saw around him for that institution to attain to the happiest results. They might hope that the foundation was laid of a great institution which would be of the utmost importance in aiding the progress of architecture, and inspiring its professors with a strong sense of that propriety which a previous speaker had alluded to as being wanting at the present day. But in order to get an institution which should stand at the head of all others of a similar nature in Europe, he did not think they should rely so much upon Government as upon the exertions of those who were more directly interested in the profession of architecture themselves. He had much pleasure in testifying to the most valuable services the officers of the institution had rendered, and he was sure the meeting would unite with him in returning them sincere thanks.

The Rev. Mr. Boutell seconded the motion. Having had an opportunity during the past year of becoming acquainted with the practical working of the institution, he could bear strong testimony to the claim of its officers to their warmest gratitude. The collections around him were by no means complete in themselves, but their real value very mainly depended upon the guiding spirit which presided over the institution itself; and he was quite sure he should have the acquiescence of the meeting when he said, that they had in their presiding spirit exactly what was required to infuse a life into the dry casts themselves. The art of architecture was safe under their direction. He had the greatest hope of the future success of the Museum, under the safe keeping to which it was entrusted. They desired to assemble their collection in that spot, in the first instance, in order that it might expand, and call for a more commodious receptacle; and that by showing what had been done in times past in that great art, and how these different results had been obtained, they might awaken a kindred spirit in our own time.

The resolution was carried unanimously.

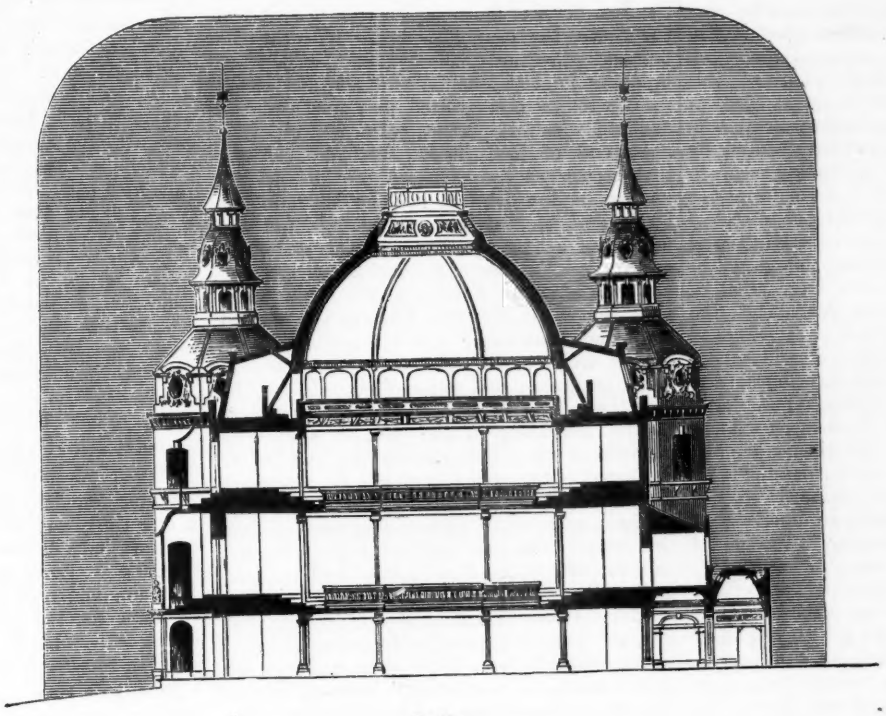
Mr. Scott, in returning thanks on behalf of himself and his collegues said, in reference to the assistance received from Government, he would indulge in the hope that the Department of Science and Art, under the Board of Trade, would, from the experience they had of those connected with the Museum, believe that they were most anxious to do all they could in return for that assistance, and he believed that practical value had already been given for such assistance.

Mr. Godwin rose to propose a resolution, which he was sure they would receive with acclamation, "that the thanks of the meeting be given to Lord de Grey, for his conduct in the chair." He had had the privilege for a number of years of experiencing the advantages of Lord de Grey's assistance at the Institute of Architects, of which, as they knew, he was president, and where he had always been ready for a long period of time, to aid any views which might seem promising for the advantage of their art, or even of the members. He (Mr. Godwin), could recognize in the manner in which his lordship had already taken up the Architectural Museum, an intention of pursuing precisely the same course there with precisely the same advantageous results to those connected with it. He did not know that he ought to detain them at that advanced period of the evening, as there were very many things to be seen, but still he would take the liberty of adverting, in two or three brief sentences, to some points that had occurred to him during the business of the evening. He thought it must be apparent to every architect that the advantages of the Museum were beginning to be felt out-of-doors. He had himself, on one or two occasions suggested to workmen in the country who were about to commence operations of importance the advantage of visiting that Museum; and on two special occasions—one in which a man had travelled 100 miles, and the other in which 140 miles had been travelled—he had seen the effect which a visit there for two or three days had had upon the workman. Every one could do something to assist the Museum—the churchwardens, the incumbent of every church in the country, could send something which would be of value; every architect in his own practice, if he would but bear them in mind, would be able to extend the usefulness of that Museum. Such extension could not possibly result from the exertions of a small number. They wanted a widely varied collection of casts. He was disposed to think we must look to eclecticism for progress in their art, recombining existing materials. The necessity for spreading abroad a knowledge of art was obvious. What a falling off was there in the arts of decoration in this our nineteenth century! Wonderful as it is in the way of electric telegraphs and steam-engines, still in point of decoration, no one could look at the works of past centuries without feeling that we had, in an extraordinary degree, deteriorated. Without enumerating other instances, let them glance even at the tombstones of our day, which, generally speaking, are of the plainest possible description, being quite devoid of anything in the shape of decoration—and form a striking contrast, not merely to the wonderful works of the mediæval artists, but to those even of the last century. The same remark applied to ironwork, as might be seen in a walk through the old parts of London. It was equally important to lead the public to appreciate as it was to induce the workman to strive after something better in art; because, as the patron so is the artist. If the public looked for beauty of form and harmony of colour, artists to produce these would not be wanting, and those who did produce them would be well remunerated by the public. Some allusion had been made to Government. He was not quite certain that our own Government always did exactly what was right in those things; in fact, he thought they often did what was very wrong. Mention had been made recently in Parliament of the manner in which English sculptors had been treated; the expression with regard to that had been so universal, that it needed no comments. There was not room for sculpture in our ordinary houses, and it needed State aid. To say that English artists were not capable of successful competition was absurd, remembering, as they did, what members of their own body had done at Hamburg and at Lille, against all Europe. Look at, if he might touch so delicate a subject, the structures now being erected at Brompton, to contain the Vernon Gallery and the Marlborough House collections. Those wretched, boiler-like erections that are now being put up there, he considered a reproach to our time, a great error on the part of the commission, and one which they ought to take immediate steps to rectify. However, he found he had wandered somewhat from the purpose for which he had risen, which was to move a vote of thanks to their noble chairman, which he was sure would meet with a hearty response.

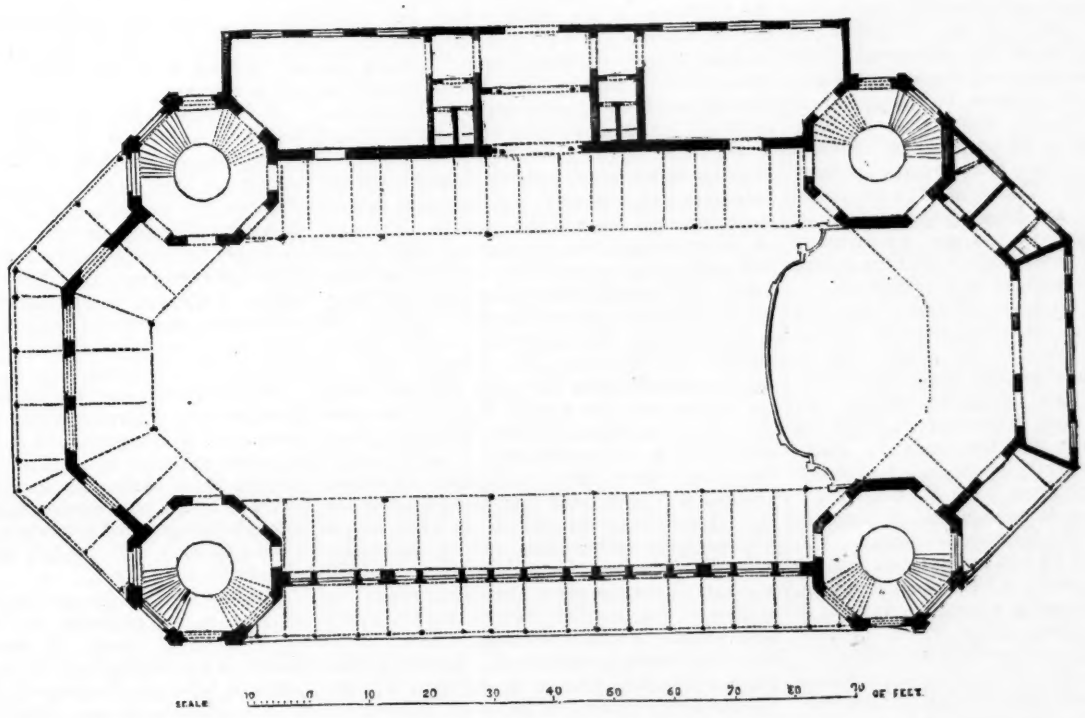
Mr. Parker, of Oxford, seconded the resolution. They all knew the valuable services their chairman had rendered to the cause of architecture, and it was unnecessary for him to refer to them. He supposed he had been called upon to second the motion as the representative of the Oxford Architectural Association, which institution, he believed, was the first to contemplate a collection such as they saw around them, and was being productive of very good results.

The Chairman said it was perfectly true that he had been attached to the science of architecture for some years. He professed no science; he did not understand anything about it in a deep scientific point of view. He had the eye of a scene-painter, he believed; he knew what pleased him, and in that respect he had an architectural turn, and an architectural taste. Some years ago he was requested to take a part in the Institute of Architects, which had given him a certain degree of celebrity which he did not think he deserved. Believing that in such cases the mixture of different classes of society was of service, he accepted the office, and he had endeavoured to the best of his ability to discharge the duties of that office, and had done all he could to be of service to the noble art of architecture and its professors. The Architectural Museum was founded on the same principle as the institution to which he had just adverted; but there was this difference, that the humblest follower of the art might participate in the advantages offered by the Museum. They had heard from high authority that it was an institution peculiar to this country. There was not in France (although there might be many good institutions there) an institution to which the lowest workman—a man literally in his apprenticeship—might come for a mere trifle and be able to see collected together all the best specimens of every style of architecture in which it is possible for him to be employed. He

CONCERT HALL, SURREY GARDENS.—MR. HORACE JONES, ARCHITECT.



Section.



Plan.

(the chairman) recollected urging on one occasion, that those who were interested in the institution should not confine their specimens too much to one class. The Mediæval style was then coming into vogue in the country, and a larger collection of casts in that style had been made perhaps than in any other by private individuals. At that time he stated that an institution of that nature ought to be general. He believed that suggestion had been acted upon. It was perfectly true that the largest number of the specimens around them referred to the Mediæval period, but they were not exclusive. They were now confined for want of space; they had hardly the means of showing what they could do. They were, however, stimulating fresh individuals to come forward to assist them, and he hoped the time would come when they would stand in a more advantageous position. He strongly recommended that no effort should be spared to insure a continuance of the support received from the hands of Government; and concluded by thanking the friends of the institution for their past support, and calling upon them to increase rather than diminish that support, for the future. For himself, he could only say, that nothing on his part should be wanting in promoting the welfare of that excellent institution.

THE MUSIC-HALL AT THE SURREY GARDENS.

THE Surrey Gardens Concert Hall, which was opened with the first of a series of musical performances on Tuesday last, is a building of unusual dimensions and considerable constructional merit. As shown by the plan and section, it consists of one great hall, with three tiers of galleries, and the orchestra at one end, covered by an arched ceiling, with four stair cases octagonal on the plan, and the requisite refreshment and retiring rooms. At one side of the building, access is gained from two of the internal galleries, by numerous window openings, to external covered galleries looking towards the lake. The ends of the plan, it will be seen, are semi-octagonal; and the projections of the main front, the towers with the somewhat Eastern appearance of their terminations, and the high roof curved in section externally as internally, and surmounted by a continuous lantern with louvre boarding and iron railing at the top, combine to produce a certain effect. The materials are grey stock bricks, and red brick for the towers and window openings, Portland cement for mouldings and ornaments, and cut slates and zinc for the roof coverings, the latter material being also used for the dressings to the lucarne openings

of the towers, and the dormer windows of the curbed roof. The prominence of the roof, together with its main form, realize somewhat the expression of the feature in Palladio's Basilica at Vicenza. The material, zinc, laid with rolls, contributes its own peculiar character to the design; and where used turned up into ornamental work, suggests the possibility of an extensive application of this material for decorative enrichments. Zinc, of course, has, comparatively speaking, but moderate durability; but it is extensively used by the French, with whom it would seem to be not only better laid, but as material, to have much greater power of resistance to atmospheric changes. The question is certainly well worth special investigation; for, though galvanized iron has been used over large areas of roofing, as in the Houses of Parliament, the great difficulty which there is in preserving the edges from rust is a matter of serious consideration. The use of lead for the several roofs and flashings to the buildings now under notice, would, it is thought, have increased the cost about 1,000*l.*—At night time when the interior is lighted up, the effect from the exterior is one which is novel in London.

When there is some difficulty in describing a building through terms belonging to recognised styles, the chances are that the very difficulty arises from that which is part of the merit. Again, it is possible to use a bad style, as the leading one, and yet to gain effect in masses, and in general design. Some credit of that kind is due in the present case. The architect's favourite style seems to be the degenerate Italian, with a large infusion of French taste. Natural ornament is freely introduced. Piers at the base of each tower at the angles, however, support small groups of figures and ornament of very indifferent character. Some difficulty with the design of the towers is also obvious in certain window openings, where the stairs come in the way. But, full consideration of details by an architect himself, is impossible under the present system of executing works. The architect is not placed in a fair position; and happy may he feel, if, as in the present case, he can gain a measure of success in the decorative effect, and can escape a fatal omission or error as to his structure.

The general plan here, indeed—though not involving many requirements — must be considered as well chosen for effect, and as conducing to the structural sufficiency of the building. The only exception calling for serious regret, is that of the narrowness of the treads of the stairs next the hand-rail. Some alteration will, we fear, be required to prevent all likelihood of accidents. On the other hand, the provision of a large amount of staircase accommodation calls for especial praise. The staircases are each 21 feet in the clear, and the stairs are 6 feet wide, with a 9-feet well-hole. The landings are partly supported by tiers of iron columns, — precautions which, in long lengths of landing, are too often omitted.

The main entrance to the body of the hall is in the centre, where the principal refreshment-rooms are placed,—forming a projection from one side of the building of one story in height, the cornice of which will have placed along it a line of gas jets, and being surmounted by flower-vases. The dimensions of the hall itself are in the clear 153 feet 6 inches by 68 feet 6 inches, and the external dimensions, galleries and refreshment-rooms included, are 173 feet 6 inches by 99 feet. The external galleries along the side are in width, the lower one 8 feet 6 inches, and the upper one 5 feet 9 inches. The internal galleries of the hall are in width 16 feet 6 inches, except in the case of the upper gallery, which does not project in front of the general line of columns. The height of the hall is 77 feet in the centre, to the underside of the glass of the lights, and 70 feet deducting the lantern.

The iron columns to the upper tiers are hollow, and are reeded, and with a spiral band; and have enriched capitals, over which a shell is fixed on the front of the girder. The columns of the ground story, from the difficulty in getting other castings executed, are of the cross form of section, and are finished in cement. The capitals here are connected with the girder by a group of trusses. The curved fronts of the galleries are in ironwork, cast in patterns exhibiting musical instruments and other devices.

The divisions of the galleries and roof are into five bays. The roof-framing is composed of main and intermediate ribs, which spring from the floor level of the top gallery, and are cut to the curve, the main ribs being 13 inches by 6 inches, in four thicknesses of 1¼ inch stuff, breaking joint and bolted together, and with a rib of wrought iron rivetted, in the centre—an addition which is perhaps not necessary. The upper ends of these ribs are notched or tenoned to a strong sill, at the base of the external lantern, and which sill running all round it, forms part of a system of framing after the manner of a queen-post truss. This system of roof is a modification of the well-known arrangement revived at the Exhibition building in Hyde-park, the Great Northern Railway station, and other important works, and has been employed by the architect of the Surrey Music-hall in many instances, and successfully. It will be seen that particular care would be required as to the sufficiency of the sill or continuous member at the heads of the ribs, and to the manner of notching or tenoning to it; and which care in the present case has doubtless been taken. There is, however, a further important distinction between this roof and such as have the ribs built to compass the whole span. In the Hyde-park building the arched ribs were thought not to exercise thrust; and abutment, if provided, was, we believe, regarded only somewhat as a measure of precaution. In the other case, however, there being no tie, abutment is obviously the sole dependance for the safety of the structure. This the architect here has provided by bracing from the towers—that is by a system of framing, within the thickness of the gallery floor, and which may be compared to a trussed partition laid flat. In some degree, the contrivance resembles one used in iron, at the Crystal Palace at Sydenham. Further, the framing at the opposite sides is connected at the ends; and the whole principle and arrangement might seem free from objection. The district surveyor, however, thought that tie-rods were still necessary, and these now detract much from the effect of the interior. The main and intermediate ribs are covered with rafters laid purlinwise,—every fifth or sixth rafter being a deep one running through the whole thickness, and to these last the ceiling rafters cut to the curve are fixed. The purlin rafters are of course boarded for the zinc. The ceiling is relieved only by mouldings on the main ribs, and along the centre; but the apsidal form of the ends gives it a good effect. The central portion, from end to end, it will be understood, is flat,—here there are three deep octagonal apertures, panelled with perforated zinc, and glazed at the top. The lighting by night is by a line of gas jets round the main cornice, and by chandeliers under the galleries. The chandeliers, brought in a hurry from the glass warehouse, should be exchanged for something from the architect's own design. *Art* in such things will tell more than committees are aware of. A more serious deformity in the interior is supplied by two hideous boxes thrust into the lower gallery next the orchestra; and which we venture to assert the architect has had nothing at all to do with. Architects, however, should more frequently protest against things seriously detrimental to their work; and so, most unfairly injurious to their reputation.

We should state that the orchestra, as arranged for the opening, to accommodate 1,000 performers, has what we may call an upper story. The front of this is hung by iron rods from a strong truss above. Adjacent to the orchestra are refreshment and retiring rooms for the performers. Over all, is a great sounding-board,—the cornice decoration, which is of festoons and trusses, ranging across it. The orchestra generally is too plain in effect; but for decoration in colour in any part of the building there has been no time. Decorative painting should go ultimately further than the gilding of a few enrichments. Considering that four months have sufficed for what has been done, the architect, Mr. Horace Jones, deserves some praise. The work is creditable to Messrs. Scott and Cornwall, the contractors.

Exclusive of the orchestra, the building will accommodate about 10,000 persons; and 12,000 can be accommodated in all parts, and inclusive of the external galleries. The building was contracted for at 17,000*l.*; and 1,200*l.* more may be the cost of certain additions in the way of refreshment-rooms, ordered by the directors.

The gardens have been drained and altered under Mr. Forest's direction: Mr. Danson has painted a view of Constantinople, looking down the Golden Horn, and a representation of mountainous scenery; has contrived some elaborate machinery for allegorical representations; has completed a kiosk, in the gardens in an Eastern style, with some aid from particulars furnished by Mr. I'Anson; also an imitation of stalactite caverns, and a novel system of garden illumination,—the lights being placed along the borders of the grass, in oiled and painted canvass shades. M. Jullien holds the *bâton*, and we can only say that the company appear to well deserve success. How the management may handle their materials, however, has yet to be seen.

LODGING-HOUSES FOR THE INDUSTRIOUS CLASSES.

THESE foundations, having their origination in our time, and now assuming a national importance, have become essential to an improving generation. Based on philanthropic principles, their aim and object ought to be, to furnish dwellings for the labourer and his family, *in quality better than* those hitherto attainable, and *in cost more suitable to his means.*

To strike in at once upon the very best possible mode of arrangement and distribution of structure, or to afford accommodations at the lowest possible rates, could hardly be expected: it requires time, and application, and experience, to consummate these objects; and the wonder is, that so much has been so well done in so short a period.

It is manifest that, in order to be permanent and really utilitarian, all such institutions must be *self-supporting;* and as the abodes of the toiling millions — their hearths and homes whereat the manners and morals of their children are fashioned,—involve all that is valuable to humanity—their comfort, their self-respect, their independence—nay, their immortal interests,—it behoves the citizens of this wonderful metropolis, as well as the Government charged with the country's destinies, to encourage and promote the movement.

Some reference to what has been already done is necessary to determine what remains yet to be done: and if it happen that any fault be found with the realization of good intentions, it is not because there exists the smallest taint of suspicion as to the pure motives of the first benevolent and distinguished founders: no, their object was to do good, and *they* will not object to him who would do better.

The first model lodging-house, founded within seven years, was projected for the residence of *single men;* it stands in George-street, St. Giles's, is a solid building of five stories with *a basement*, having a frontage of 78 feet. There is no *curtilage in the rear*, which is built up solid, without windows, save in the staircase, the construction being (what is called) fireproof: every floor is bisected by the staircase, and forms two great chambers or lofts, plainly plastered, each chamber being about 32 feet by 25 feet, and 9 feet high: these are partitioned off by wainscoting, about 6 feet 6 inches high, into two ranges of chambers or forms, measuring 9 feet 6 inches by 4 feet 6 inches! Each chamber has a 3-foot bed, a chair, and washstand; and a corridor of 7 feet wide divides the two ranges: thus there are fourteen lairs in each of the ten rooms, making sleeping quarters for 140 men.

It rarely happens that there are two beds vacant at a time, and there are generally supernumerary candidates for an empty room. This is the best argument for the great utility of the establishment and for the sufficiency of its provisions, *quoad* bachelors; but the chief points of advantage are to be found in the large kitchen and its ample fire, always in full action for the service of every individual,—the warmth, cleanliness, and ventilation, together with gaslight, and not least in the consolation of a spacious reading-room, not ill provided in periodicals,

which answers as a saloon for the whole community.

By this mode of laying out, each room is open, above the height of 6 feet 6 inches, to the breathing supply of fourteen inmates. If there should be any one unruly, the system of the house corrects it: the minor grievances are compounded for,—2s. 5d. a week, *paid in advance*, being the total charge per head.

A single man, whatever be his earnings, must find great facilities under such a regimen; and seeing the difficulties which beset a workman or mechanic, ay, or a clerk on 70*l.* a year, when he incurs the expenses of matrimony; the support of a wife, with only *one child*; with the incertitudes of employment, and the misfortune of sickness sometimes superadded, we cannot wonder that all these berths are full.

A visit to the single rooms of married labourers, crowded with half clad, ill fed, and, perhaps, worse taught children, must certify to the political economist of London, how unhappy is the case of the father, how wretched that of the mother, who, yielding to the natural, the laudable, the virtuous impulses of our nature, have committed the mortal error (in their sphere) of canonized matrimony.

Accommodate, then, the bachelors: "make it comfortable to" them. From the above remunerating summary it will appear that a return must be obtained for the capital expended.

There are several other establishments since built by the Metropolitan Association for improving the Houses of the Industrious Classes, which company has obtained a royal charter, and has already completed five large concerns,—one at Bermondsey, one in the City, one in St. Giles's, one in New-street, Golden-square, and a very fine building in St. Pancras-road, all for families: of these, the last is decidedly the best as to healthful situation and construction. Standing on high ground in an open thoroughfare, it has a reserve of space (paved), in the rear, for drying linen, &c. and in the front for open air exercise, and the recreation of children. On inspecting the various houses, the difference in the infantine aspect is most remarkable. While at Golden-square (New-street), the poor nurslings have a wan complexion, and more subdued deportment; here they are animated, and although little better in attire, they seem less constrained. The purer air and larger range may have this influence, as upon the wild flowers, when transferred from laughing meadows to the smoked window cill. The little ones of Golden-square do look dislocated; for there there is no reserve of play-ground, except a courtyard, built around to 50 feet in height, like a Parisian hotel. There is an internal quadrangle, receiving sunlight at an angle of 45, and all around narrow lanes, athwart one of which the colossal brewery rises in obnubilated majesty. From the brewery a reek of fermenting vapours perpetually issues, and the stone vaults for 1,000 tuns traverse the basement of the lodging-house throughout: in fact, the inmates complain of the *incense* thus offered, and keep their windows close to exclude it.

Far be it from us to utter one word unjustly to the prejudice of any private interest; still the fact must be admitted that it was precisely here that the cholera raged with such unwonted violence, and the ranges just opposite to the model house were those where the heaviest visitations were felt.

The great barrack (for that is its character) erected here is 126 feet by 90 feet: it has frontages to four streets or lanes, is five stories, or about 60 feet in height, and encloses a paved court-yard, 72 feet by 30 feet. The entrances are all *internal*, which gives a gloomy and prisonlike aspect to the place. The breeze, if any, is denied access, and all aëration is from above. Still it cannot be denied but that these tenements are a vast improvement upon the former habitations of workmen who had been tenants of single rooms. The sets are arranged in suites of two and three rooms, with a scullery and water-closet to each tenement, the sitting-room being about 12 feet square and 8 feet high (8 feet 9 inches in the centre), and the sleeping-rooms about 10 feet by 8 feet 6 inches. The rent of three rooms is weekly, paid in advance, 6s. 4d.; and of two rooms, 5s.

There are in this building wash-houses in the basement, but the ventilation is so imperfect that the poor occupants are constrained to *dry their clothes in their rooms!* This is a hiatus in the precautionary care requisite for such an accumulation of mortality.

The central position of this house, and the paramount necessity which compels the artizan to fix in a location near to his employment, keeps it always full, even at these charges; but every one who will reflect that *twenty-five shillings a week* is about the standard wages of the workman (whatever be his trade), must admit that 6s. 4d. is more than can be spared from the staple support of, say, a wife and two children.

A good tradesman may earn 2*l.* or commonly 35s.; but is he not subject to the vicissitudes of ill-health, as well as change of employment? He must therefore reserve 5s. or 7s. a week for contingencies. This is, we fear, only done in exceptional cases; but set his income down at 30s. and then the rent is more than he can spare. The way, however, in which the excess of rent-charge is met is simply this: the frugal wife furnishes a bed-room—lets it, say at 2s. 6d. a week, and thus becoming landlady, shares her family's sitting-room, and saves thereby 2s. 6d. sitting down at a rent of only 3s. 10d.; but this arrangement brings down the lodger to the position of an occupant of only one room, and that in association with her family and guest.

That the committee of management know this is pretty clear, for a stranger on his *first* inquiry could not find it out unless it were palpable. There is nothing to blame in it, for it is a relief to the party making so great a sacrifice to imperious necessity,—but it proves that the rents are too high, and it also proves the more important fact that the *"Royal Metropolitan Association" does not answer the end for which it was chartered.*

The *Builder* proved, in various articles published long since, that lodgings for workmen ought to be had, and could be provided, for 1s. 6d. per week each room; and that, too, with all the accessories supplied by the company.

It is not the province of the investigator to inquire into the expenses of management of the company, what is the number of *employés*, nor what their salaries; nor what interest they allow for principal moneys laid out; much less, what may be the profits divided amongst subscribers to those admirable institutions: but it is his duty, and his anxious desire, to inform the public that *lodging-houses of a substantial and clean character, embodying all the comforts and improvements* (which he freely admits exist in the model-houses) so requisite for the English workmen and families of our day, *can be provided at the rate of* 1*s.* 6*d. per chamber*, and then leave seven per cent. to be distributed to shareholders or capitalists.

In order to fix beyond cavil the fact that such rents are sufficient, it is only requisite to *restate* that eight-roomed houses (the chambers being larger and better finished than those in lodging-houses) are to be had everywhere for 30*l.* a-year, which is 1*l.* 4s. under the charge of 1s. 6d. per room weekly; and these houses, be it understood, have gardens and fore-courts, together with neat fitments and register-stoves, &c. &c.

Pancras-square House, being remote from the business centre, is tenanted for the most part by persons less dependant on labour, and evidently above the class of operatives: some of the suites are handsomely and tastefully furnished: still, as in the others, handicrafts are carried on there also, and numerous families of four or more children, with their parents, are crowded together; in some cases with a lodger inmate also: the superior arrangements, however, of the building, its ventilation, clean staircases, with all the accessories of health therein provided, place it, even under such circumstances, far above the ill-constructed, tottering, and filthy dens of this, or the more central lodging streets of the old regime.

The area occupied is large, and the dimensions of the building are 222 feet frontage to Platt-street, 108 feet to St. Pancras-road, and about the same to Goldington-street, a reserve being paved and walled in at the rear, for a drying-ground. It has five stories, and contains 110 sets of chambers, being divided into eight houses: the rents vary here from 4s. for a long narrow room in the *basement*, to 7s. for the best set, the average price being 6s.; which would realize, provided all were let, an annual rental of 1,716*l.* Notwithstanding the eccentric position, all the chambers are occupied at present, save only fifteen, leaving ninety-five sets paying rent, leaving 1,482*l.* net.

Supposing that the structure, which is fire-proof, had cost 15,000*l.* and that the expenses of management were set down at the liberal allowance of 2½ per cent.; and that, after making allowance for a surplus of fifteen chambers, as unlet and unproductive, then still there would remain *seven and a half per cent.* as interest for the shareholders; no bad return this for money invested on a philanthropic association!

Lastly, for this occasion, comes the lodging-house for families in George-street, Holborn, which is erected much on the plan of the others, being five stories in height, with 174 feet frontage by 72 feet in depth, an internal space being reserved at the back, of 70 feet by 40 feet, which is paved and open above 20 feet: this, also, has a *basement*, opening to a narrow back area, and the rooms therein *are let!* The open-railed galleries, covered at top, which range along every floor, give a lightness and airiness that relieve its otherwise shut-in position. These conduct to the various locanda, as in an Italian Albergo, and divest the place of the barrack character; but the front is too close upon opposing houses, which darken the rooms, especially below; yet this house, from its vicinity to business haunts, is much in request, and *always full*. It contains fifty-six separate suites, and there are at this moment nearly as many *candidates for any vacancy that may occur!* So much as to the necessity for these establishments. Now for the profits.

Suites of apartment, in size and height similar to the Company's other houses, let say at 6s. each set, would produce 873*l.* 12s. per annum. On a calculation, hazarded in parity with the larger house, this establishment ought also to have a dividend, after paying all expenses of management, of 7½ per cent.!

Of the minor domestic advantages enjoyable by the inmates, such as a warm-bath and the use of a washhouse, at a very small charge per hour, little need be said: but the great object of such foundations, is, or ought to be, the providing of homes combined with every possible social advantage, and at the smallest possible cost, consistent with a fair return for interest on capital expended. Is this done? We say no. The struggling artizan, the poor labourer, the porter, and numerous others, subject to casual vacations, *cannot find an asylum there:* in truth, we discover that many persons with incomes fixed, and ranging far above the grades contemplated by the patron and founders of these Institutions, are the actual tenants, and have handsomely furnished domiciles therein.

What is wanted more particularly is that which is found only in the Bachelor's Home, in Endell-street, *a good kitchen*, supplied with a constant fire and hot water: there families and individuals might learn of each other the art of domestic and of *economic cookery;* and by this simple and useful appendage, large fires might be saved in private sitting-rooms, at all times sufficiently crowded, while the amenities of life should be preserved; thus transforming the private kitchen into a parlour, *tolerable in summer* for the family, or even for visitors; if, indeed, we can venture to foreshadow to that extent the ceremonials of conventual life amongst the humble.

One word on the subject of *Wild-court*,—the modernization of that formerly foul nest of lairs which had been cleared out; and the plan whereof was given in the *Builder*.

A commencement certainly was made to remodel these old houses, fourteen in number, occupying the whole range of the court, about 120 feet long: the outside was washed: closets were erected on every floor of each house: the interior also was washed, *painted woodwork and all, in distemper colours;* and they were let, as before, the front rooms at 3s. the back rooms at 2s. or 2s. 6d. weekly. Nothing, or very little, was done to the floors or staircases, which are in a state bad as any hay-loft. The old panelled

wainscoting covers still most of the walls, and affords an effectual shelter for the insect tribes that "multiply exceedingly" therein. The walls of many of the halls, kitchens, and staircases are of rough brick, old, and not plastered! And the basements, although unoccupied, are heaped with rubbish, and unusable! It is true that in the larger front rooms (at 3s.) a sort of bin for a bed is fenced off by a boarded partition 6 feet 6 inches high. This, too, has been washed in distemper colour! Surely, in their present state these houses cannot be considered complete, nor fit for the residence even of the poorest.

QUONDAM.

THE MANCHESTER EXHIBITION BUILDING.

THE five competitors, to each of whom the committee forwarded a cheque for twenty guineas, were—Mr. Owen Jones, London; Mr. H. A. Darbishire, London; Mr. J. E. Watson, Newcastle-upon-Tyne; Messrs. J. Holden and Son, Manchester; and Messrs. Hayley, Son, and Hall, Manchester.

The first named, as our readers know, whose design was in the first instance selected, returned the cheque. The selected design presents a repetition of the three steam-boilers, side by side, with which Brompton is disfigured, with an ornamental brick "front" attached to one end.

Prince Albert, in his letter to Lord Ellesmere, touching the exhibition, says,—"If the collection you propose to form were made to illustrate the history of art, in a chronological and systematic arrangement, it would speak powerfully to the public mind, and enable, in a practical way, the most uneducated eye to gather the lessons which ages of thought and scientific research have attempted to abstract; and would present to the world, for the first time, a gallery such as no other country could produce, but for which, I feel convinced, the materials exist abundantly in private hands amongst us.

As far as painting is concerned, I enclose a catalogue exhibiting all the different schools, with the masters who illustrate them, which able hands have compiled for me, and which was communicated to the National Gallery Committee of 1853, and printed by them with the evidence."

It is a very admirable suggestion, but whether or not it can be efficiently carried out, must, of course, depend on the extent to which owners of choice pictures respond to the invitation of the committee.

CHURCHES STRUCK BY LIGHTNING.

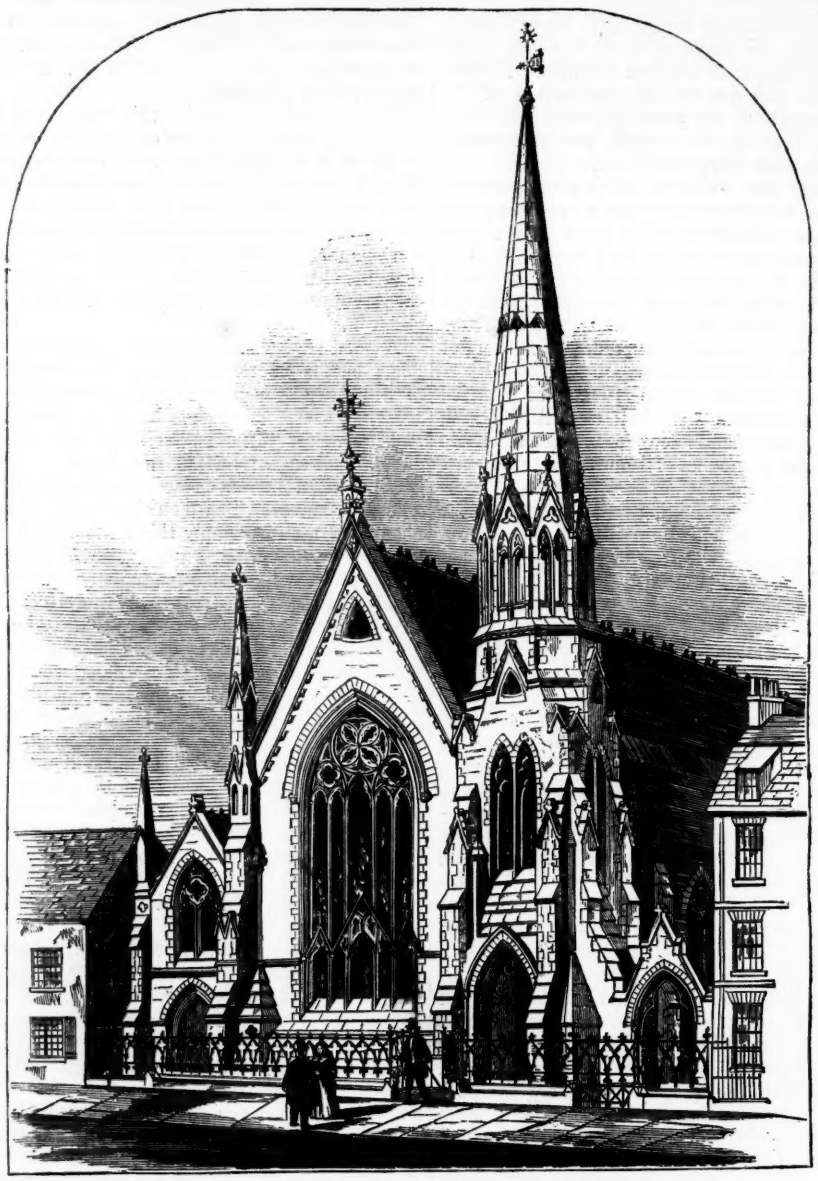
IN your last number you give two cases of considerable damage being done to churches by lightning, but no mention is made of lightning conductors. It would be very satisfactory to ascertain that churches and other buildings so struck have not been protected by conductors; or, if they have had any, the substance and material of the conductor, and where and how applied, would be valuable information. Facts of the kind gathered together, if they establish the advantage of applying conductors to large buildings, would lead to their more general adoption, and impart a confidence in their use, which can only be duly appreciated while the storm is thundering over our heads.

A few weeks ago the chimney of St. Jude's parsonage (Southsea) was struck, some of the slating shivered, and a sulphurous smell left in the house. The chimney was about 100 feet from the spire of the church, which is about 150 feet in height, and has a copper wire rope secured to the iron stem of the vane, passing downwards through one of the tower windows, and thence by a ¾ iron rod to and into the ground. It was thought that the presence of a conductor on a ofty building so near would have protected the parsonage, but it did not.

T. E. O.

GASWORKS AT BUENOS AYRES.

THESE extensive works were brought into operation for the first time on the occasion of the festivals, on the 23rd of May and two following days. On the evenings of these three days the streets were lighted by the gas-lamps intended for ordinary illumination, and the Plaza was brilliantly illuminated by ranges of gaslights, protected from the wind by glass globes, and the numerous arches of the Cabildo, or Casa del Justitia, had handsome chandeliers suspended therein. The contract for the buildings, machinery, mains, and lamps, amounting to nearly 50,000*l.* was entrusted to the firm of Messrs. Edward T. Bellhouse and Co. of Manchester, in June of last year, and is being completed under the personal direction of Mr. Wm. Bragge, engineer to the company. The inauguration of gas on the occasion mentioned was most satisfactory, and will prove an era in the march of civilisation and improvement in the regions of the Rio de la Plata.



NEW CONGREGATIONAL CHURCH AT DORCHESTER.
MESSRS. POULTON AND WOODMAN, ARCHITECTS.

NEW CONGREGATIONAL CHURCH, AT DORCHESTER.

THIS edifice is to be erected in South-street, Dorchester, from the designs of Messrs. Poulton and Woodman, architects. The walls are to be constructed of Ridgeway random walling, with Bath stone dressings. The edifice is 37 feet wide in the clear, and 65 feet from the front wall to the front of the chancel arch, and 76 feet from the front to the back wall of the chancel. The fittings are to be deal, stained. The pulpit is to be a raised rostrum, with iron railing round it. At the front of the church is the west gallery, which will accommodate the children. In the recess behind the pulpit stands the organ. The school-room, 26 feet 6 inches by 39 feet in the clear, is at the extreme end of the site; and the vestries, heating apparatus, and offices lie between the church and the school.

THE RIGHT TO THE NEW-RIVER WATER.

COMPENSATION CASE.

THE New River Company requiring 1a. 2r. 38p. of land forming a portion of an estate at Wood-green, near Hornsey, let on lease to Miss Harris for twenty-one years, for the purpose of constructing a tunnel or new cut from the Southgate-road to Wood-green-common, and the claimant and New-River Company not agreeing, the claimant called a jury before Mr. Under-Sheriff Burchell, in Red Lion-square, on the 9th inst. to assess the damage she would sustain. The amount claimed was 690*l.* being for the lessee's value in the land, for inconvenience of access to the common, and for residential damage by reason of the water being withdrawn from the present channel, and diverted into the proposed new cut. The counsel for the claimant were Serjeant Parry and Mr. Prentice; for the company, Mr. Hawkins. The claimant and other witnesses were called, and Mr. G. Prickett and Mr. J. Barnett, surveyors, supported the claim. The company did not call witnesses. The jury, after a lengthened inquiry, awarded 375*l.* exclusive of the claimant's right to the New-River water being supplied as heretofore enjoyed.

THE NEW APARTMENTS IN BUCKINGHAM PALACE.

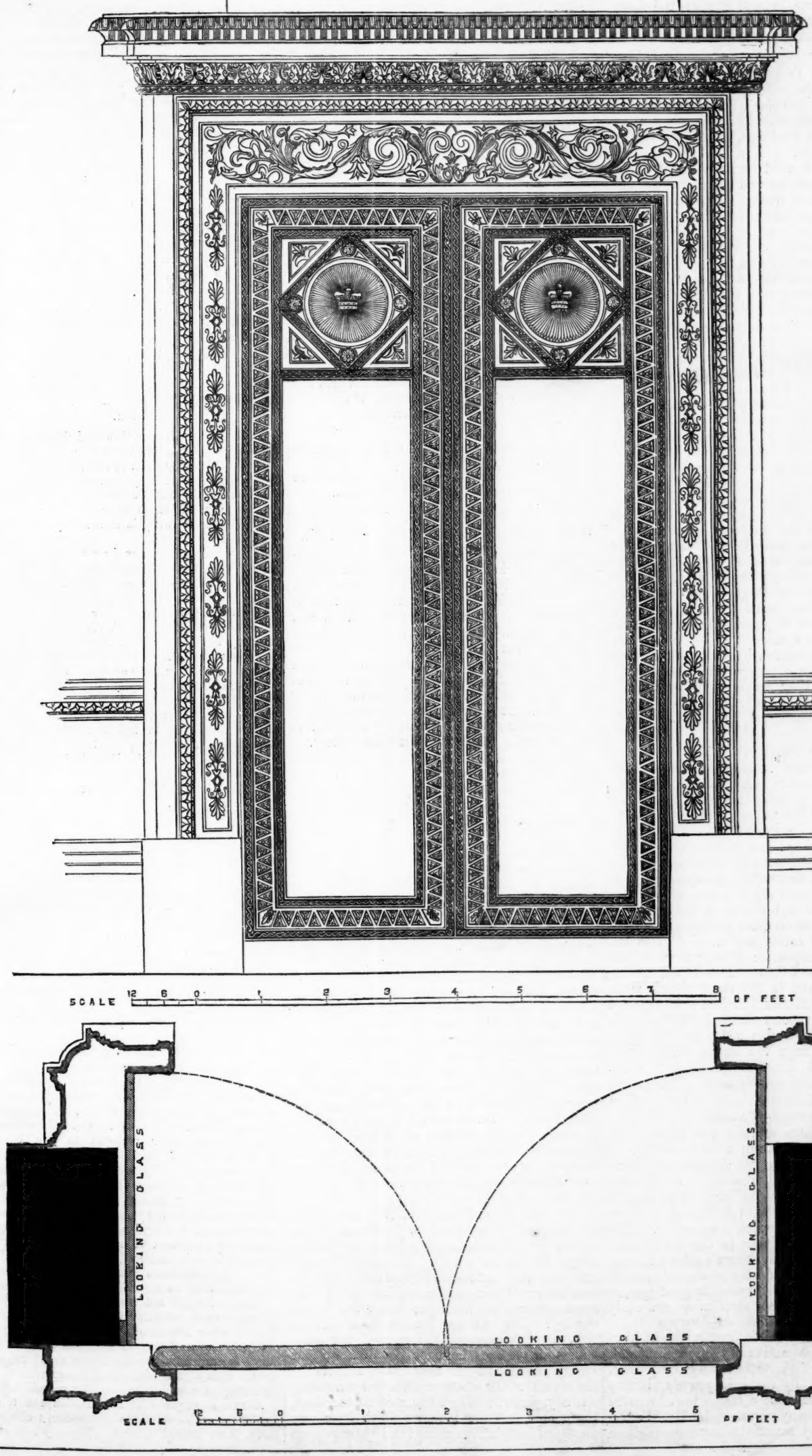
DOORWAY.

FOLLOWING up the description of the new state-rooms in Buckingham Palace, erected from the designs of Mr. Pennethorne, and the view of the ball-room, which have already appeared in this journal, we have engraved a view and plan of one of the doorways in the Supper-room. It will be observed, that when open the doors fold back in the reveal. The doors, with the jambs and soffit, are of mahogany: all the enrichments are of metal, gilded; and the upright panels are of looking-glass.

The door dressings are executed in Martin's cement, highly rubbed: the ornaments are of composition. They stand out as white and gold against a marble wall; but some little colour has been introduced.

TITLED LECTURERS.—The Earl of Caithness lectured on the 26th June, in the Free Church at Canisbay, on the steam-engine.

DOORWAY, NEW SUPPER ROOM, BUCKINGHAM PALACE.—MR. PENNETHORNE, ARCHITECT.



TILE AND PORCELAIN WORKS OF MINTON AND CO.

IN describing an excursion recently made by the Liverpool Architectural Society, the Liverpool *Journal* gives some interesting particulars of Messrs. Minton's works, from which we take the following:—

In 1840, Mr. Prosser, of Birmingham, discovered that if the material of porcelain (a mixture of flint and fine clay), be reduced to a dry powder, and in that state be subjected to strong pressure between steel dies, the powder is compressed into about a fourth of its bulk, and converted into a solid compact substance of extraordinary hardness and density, much less porous and much harder than the common porcelain uncompressed and baked in the furnace. This curious, and, as it has since proved, very important discovery, was first applied to the manufacture of buttons, to supersede those of mother-of-pearl, bone, &c.; and the applicability of the process to the manufacture of tesseræ for pavements soon afterwards occurred to Mr. Blashfield, who made arrangements with Messrs. Minton and Co. for a supply of small cubes, made according to the new process. These he submitted to various trials and experiments; and, having found them in every respect suitable for the purpose, the invention has been since carried out on an extensive scale. Tesseræ of various colours and forms,—red, blue, yellow, white, black, brown,—quadrilateral, triangular, rhomboidal, hexagonal, &c.—have been manufactured on this principle in large numbers. Pavements of considerable extent have already been constructed with them, and they have been found to possess the following advantages:—First, being formed in similar steel dies they are of uniform size and shape, so that they can be fitted together accurately in the laying down of the most complicated designs: secondly, being all composed of the same material, variously coloured, they are of precisely equal hardness, so that pavements made with them are not likely to fall into hollows by use: lastly, owing to the effect of the intense pressure under which they are made, they are quite impervious to moisture, of a flinty texture throughout, and, in a word, to all intents and purposes absolutely imperishable.

The first department into which they were introduced was what is technically termed the "slip-making." Here were several men and boys engaged in grinding the clay which had been dug out of the natural soil in the neighbourhood (in some instances there is a compound of different qualities of such matter obtained from different soils). Mixed with water, and ground so as to become thoroughly incorporated, it is made to the consistency of cream, which, after being strained through sieves of fine silk lawn, in order to separate all gross particles, is allowed to rest until the earthy matter subsides to the bottom of the receptacle: then so much of the water as remains at the top is drawn off, leaving the earthy material in the state of soft mud, from which the redundant moisture is expelled by subsequent evaporation, until only so much of the water is retained as will, after it has been duly kneaded, leave the earthy matter in a plastic state, fit for the operation of being moulded or formed by the hand of the potter into the article intended to be produced in earthenware, porcelain, or encaustic tile.

After having been so formed of plastic clay, the moulded article requires to be effectually dried, in order to dissipate all remaining moisture before it can be submitted to the usual operation of firing; and during such drying the article always contracts in bulk, but with an extent of contraction which is uncertain. This is a difficulty appertaining to the potter's art which is avoided by Mr. Purser's patent of compressing the powdered clay into metal moulds. The machine for this purpose, in great part, is an ordinary screw press, such as is commonly used for cutting and compressing metals.

The manufacture of encaustic tiles is, however, the great attraction of the establishment. The substance of the tesseræ made by Messrs. Minton and Co. by the new process, is very similar to the celebrated Jasper ware invented and introduced many years ago by Mr. Wedgewood, the earthy material being a composition of alumina, silex, and barytes, with some suitable metallic oxide for colouring matter. The tesseræ are coloured throughout their whole substance, and with perfect uniformity of tint of the same colours.

The pattern, after leaving the designer's room, is moulded in plaster of Paris in such a manner as to make the groundwork of the cast a raised surface—the coloured figures, ornamentations, or letterings, as the case may be, remaining hollow. The squares being thus prepared, material of the same component parts reduced to the consistency of cream, and coloured with the requisite metallic oxide, is carefully poured into the interstices: the surface is then planed to remove inequalities, and the pattern appears in the same perfectitude presented from the designer's hands.

The next step in the progress of the work is the "firing." In the composition of the earthy material for forming the tesseræ, and also in the management of the kiln, great care is taken to avoid carrying the vitrification beyond the stage of semi-vitrification, in order that the tesselated pavement composed of such tesseræ may not be slippery to the feet. But, in case of similar tesseræ being made expressly for the purpose of ornamenting walls with tesselated work, the vitrification may be carried further, or they may be glazed, whereby greater brilliancy may be given to the colours than would be consistent with the condition of getting a firm footing on pavement.

In the several departments there are not less than 2,000 persons employed by the firm.

THE CANYNGES SOCIETY, BRISTOL.

THE annual meeting of this society established to aid in the restoration of the Church of St. Mary Redcliff, was held on the 8th inst. on which occasion the experiment was tried of substituting a *soirée* for a public dinner, and proved very successful. In the afternoon, the members of the society went to service in the church, the mayor also attending in state, and an admirable discourse was delivered by the Rev. Dr. O' Brien. The meeting in the evening was held at the Victoria-rooms, and was opened by the performance of a number of glees, in excellent style, by the Orpheus Glee Society.

The president of the society, Mr. J. G. Shaw, then made an interesting address of some length, in the course of which, referring to the want of support by the society, he said,—I cannot believe that we are about to allow the disgrace to attach to our age, which would accrue, if we permitted that noble structure, at once the pride and ornament of Bristol, to crumble into dust. What was Bristol, it was very properly asked by the preacher of to-day, what was Bristol when St. Mary Redcliff church was built by Canynges, as compared with what she is in the year 1856? Look at the extension of her borders in all directions. Remember her population; consider the accumulation of her wealth; reflect upon the advance she has made in the arts and sciences; view the increase of her manufactures, the extension of her commerce, and the addition to her trade; and am I to be told, that with all these superior advantages she is about to allow that great building for want of funds, to be neglected and become a ruin? I will not allow such a stigma to rest upon the citizens of Bristol, even in imagination, for one moment, for it is not the character of our city that she should allow any such reflections to fall upon her. She has earned, and she has richly earned, the appellation of a city of churches and charities. Whatever there be that could be produced for the benefit of the human race, is to be found in her streets, in her alleys, and in her courts. Where will you go and not find some building erected by the munificence of her people, and devoted to the great objects of kindness, benevolence, and charity? Has she not her hospitals for the sick, her infirmary for the maimed, her almshouses for the aged, her educational institutions for the young, and her reformatory schools for the outcast? In whatever direction you survey our city, you will find evidences of the sacrifices, the genius, and the kindness which have been displayed both in former days and by the present generation of our fellow citizens; and it is not to be conceived,—it is not to be expected,—it is not to be suffered,—that the citizens of Bristol should allow the committee of the Canynges Society to dissolve and give up their present proceedings. Great encouragement has been given to the committee, and great satisfaction to myself, by a new effort which has recently sprung up amongst the Commercial Travellers in this part of the country. I have had a great deal of practical knowledge of that class, and I believe the commercial travellers will do you great service in reference to the restoration of this church. They already talk about having a portion of it allotted to them, and I believe it will be found to be no very mean portion of that building which, to their honour, will be restored by the commercial travellers of England. The President, continuing his observations, said, seeing this room so well filled by ladies, I am bold enough to propose,—impudent enough to demand almost,—that they should claim a portion of this building for their own. I am not going to advise what proceedings they should institute, but I am going to request, as president for the year, that they lose no time in forming a ladies' association, and that they may speedily send in a claim, and that the committee may soon hear from them as to the portion of the building they may select for restoration.

Mr. Alderman Proctor then read the report of the committee, showing that the society had contributed since its last meeting 800*l.* to the restoration, but part of this sum was made up from the balance of former years, and the committee felt that unless a liberal response were made to their present appeal, they would be under the painful necessity of resigning their duties.

Mr. Wm. Powell next read a report from the Commercial Travellers' Committee, from which it appeared that "a few friends met on the 22nd February, 1856, and arranged rules for the guidance of this association. At that time they were able to report the amount of cash collected 60*l.* 17s. 6d. At the first quarterly meeting, on 29th March, 1856, the treasurer reported the cash collected (including the former sum) to be 90*l.* 16s. 6d. and at the second quarterly meeting, on 28th June last, the total amount to be 158*l.* 11s."

Mr. Powell afterwards said that since the report had been drawn up he had met with another "*Nil Desperandum*," who proposed to put in the window of the Lady Chapel of St. Mary Redcliff, and that it only rested with the chairman and committee of the Canynges Society to take the necessary steps for the work to commence.

Various votes of thanks were moved and seconded by the Mayor, Mr. Alderman Phippen, Mr. R. P. King, Mr. Proctor, and the Rev. Canon Madan.

Mr. W. P. King, in seconding a vote of thanks to Dr. O'Brien, said that Dr. O'Brien, in one of his observations, had stated that he considered the building in a state of something approaching to decay. Now, he felt the truth of that remark; but still he did not consider that it was in such a desperate state of decay as would at first sight appear to a stranger, who was not aware of all they had been doing and of what the church had suffered for some years. They had been going on for years repairing the church, and had, in a great measure, arrested the decay, made good the foundations, and many parts of it, which had served to keep up the structure of the church, had been added, so that now they had no dread of an immediate downfall, as when they first began the work. The restoration had been a bit-by-bit concern, first at one point, and then another, and had not been proceeded with as a whole, which gave it more the appearance of a ruin than it was. He wished he could persuade their architect to join together all that he had been doing for many years. This was to be done by means of colour. On going into the church they saw the effect of their bit-by-bit operations, by finding a part restored adjoining another part covered by dust—a bright window in one place, and a dusty one in another, giving the church the appearance of a ruin. He would, therefore, advise their architect, with the first available funds that should come into his hands, to lay out as much in colour as would show uniformity in the building. He did not mean to advise anything like the meretricious colouring which adorned the Cathedral of Notre Dame, of Paris, but something like that which was adopted in the cathedral in Canterbury,—merely such a colouring as would give quite another idea of the building to strangers than what their eloquent preacher had that day conceived.

After a short pause for conversation and refreshments, the architect of the restoration, read a paper on St. Mary Redcliff Church. He gave a short his-

torical sketch of the building, and having pointed out many of its architectural beauties, referred to the admirable suggestion thrown out by the president, and which he hoped the ladies would act upon. Should they do so, he would recommend their taking that portion of the building which at once addressed itself to them—the Lady Chapel—the position of which was most prominent, and which he was sorry to say, was in a very bad state. In reference to the remark of Mr. King, that colouring should be used to tie together those parts of building that were finished, so as to give a complete aspect to the church, all he could say was, that he should be exceedingly glad to do it, if he only saw the way. They had heard of whitened sepulchres, and he was afraid the attempt to colour those portions of the church which needed restoration would rather retard the efforts of the committee, since the need of restoration would not be so apparent. He was afraid, too, that Mr. King took a somewhat too encouraging view of the condition of the church, which was still, he could assure them, in many parts in a positively dangerous state, and demanded not care when they could give it, but at once. The architect complimented Mr. Rice, the foreman of the works, on the manner in which he carried on the work of restoration. He trusted the committee would be provided with sufficient funds to carry on the restoration with renewed vigour, and that before long with the aid of the Commercial Travellers' Association, and with the Lady Chapel restored to its original beauty by the ladies, there would be no further reproach to the inhabitants of this city, and that they would see that glorious monument of their forefathers in a state fit for being handed down for another lengthened period.

A very satisfactory list of donations was announced, and the Orpheus Glee Club agreeably wound up a very pleasant evening.

PROVINCIAL NEWS.

Horncastle.—The new Corn Exchange here was opened on 3rd inst. The building is erected on the site of the Old Three Maids' Heads Inn, in High-street, where the corn market used to be held. The street front is of dark red brick, with stone dressings, and is formed into three compartments by pilasters on the ground floor, and columns with carved capitals on the upper one, above which runs an enriched cornice and balustrade. On each side of the entrance, which is in the centre of the building, is a broad segmental arched window. Over the doorway in the first floor is a large circular-headed traceried window, and in each side compartment there are two smaller windows. The first-floor of the frontage premises contains two rooms, which have been taken by the committee of the Mechanics' Institution, who propose moving the library, museum, &c. to these more central premises. In the rear is the Exchange-hall, 61 feet long by 33 feet broad, and 35 feet high (to the underside of the lantern). The walls are decorated with arches in low relief, and the roof is of an oblong domical shape, constructed of iron, with wood framing above, to form the covering, and receive the glass lantern, of a size proportionate to the building, and affording facilities for ventilation. The iron girders and other portions of the roof are decorated in diaper pattern, with colour, and relieved in parts with gilding. Across the north end of the room is a gallery several feet in width, which, in front, is ornamented by a bronze railing. The waterpipes for heating the room are placed above the floor, and being painted are rather ornamental than otherwise. The cost of the building will be about 2,000*l.* The works have been executed by Mr. J. Goddard and Mr. W. Hollingworth, jun. of Grimsby. The building was designed by and executed under the superintendence of Messrs. Maughan and Fowler, of Louth, architects.

Chelmsford.—At the last quarter sessions for Essex, the Rev. J. Cox moved a resolution, of which he had given notice at the previous sessions, to the effect, "that the office of county surveyor being virtually vacant, the court do consider the necessity of electing a new one." A letter was handed in from Mr. Hopper, in which he stated that when he became county surveyor, he gave security to the amount of 3,000*l.* and for forty years he had performed the duties zealously and faithfully, the business of the county having in no one instance been neglected: he had now the additional assistance of Mr. Bourne, an eminent architect, and he trusted he might be allowed to continue in the office, as it would be a testimony to his long services. After some discussion as to the state of Mr. Hopper's health, &c. the motion was withdrawn.

Kettering.—The following are the respective estimates tendered on the plan and specification approved of by the trustees for rebuilding the grammar school, master's house, and repairing the school and premises:—Mr. Young, 2,144*l.*; Mr. Wade, 1,898*l.*; Mr. Norman, 1,885*l.*; Mr. Henson, 1,826*l.*; Mr. Clarke, 1,700*l.*; Mr. Boddington, 1,695*l.*; Messrs. Bayes and Fisher, 1 67 *l.* The last-named has, it is said, been accepted. The architect's estimated cost was 1,500*l.* and as this sum is not to be exceeded, the work will have to be diminished to meet it.

Henley-on-Thames. — The new schools, connected with the Independent Chapel, Reading-road, are to be erected on a site forming a parallelogram, 106 feet long, and 45 feet wide, at the extreme end of the chapel property, which includes chapel, burial ground, minister's house, and garden, to which will now be added the Sunday and day schools. The school building will contain two class-rooms on the ground-floor, and two over, for youths of both sexes, as a central and prominent feature. The large school-room will be separated from these by a corridor, extending the whole length of the building, containing the staircase, and affording access to all parts of the building under cover. The school-room will be 45 feet long, 25 feet wide in the clear, and 24 feet high to the apex of the roof, which will be open to the ridge. When required, the school-room will be divided by a folding partition, so as to form two school-rooms, for girls and boys, each having its distinct entrance, with yard, and proper offices in the rear. The large room is calculated to seat 250 persons, and will be ventilated on the principle patented by Mr. C. Watson, of Halifax. The buildings are designed in the Gothic style. The cost of the works, including earthwork, boundary walls, stoves, ventilation, &c. but exclusive of fittings, will be about 500*l.* Mr. R. Scott, of Henley, is the builder; and the architects are Messrs. Lander and Bedells, of London.

Ashford. — The new stock market will be opened to the public on the 29th inst. The works are progressing under the direction of Mr. Bulmer, architect. The siding now in the course of erection by the South Eastern Railway Company, will enable stock to be brought to and taken from the market to almost every town in Kent, the siding being in the market.

Cirencester.—The new museum building, recently erected by Lord Bathurst, for the reception of the Roman pavements discovered in 1849, in Dyer-street, will be open to the public during the visit of the British Association to this county next month.

Birkenhead.—The foundation stone of a new post-office was laid in Conway-street, Birkenhead, on Monday in last week, by a son of Mr. J. Craven, the builder and proprietor. The architect is Mr. J. Brattan, and the building will be in the Corinthian style of architecture. The ground floor will be devoted to the purposes of a post-office, and will contain a general office, 28 feet by 38 feet, a messengers' and letter-carriers' room, postmaster's room, and bedrooms. On the first floor there will be accommodation for the Birkenhead Free Public Library and Museum, the large room being intended to be 45 feet long by 32 feet wide, with a room for the librarian behind. The Government have leased the post-office for twenty years, with the option of renewing the lease for fifty years longer.

Stanley, near Liverpool. — The foundation stone of the new schools in connection with the Independents was laid on the 8th inst. The design is Italian. Mr. W. J. Mason is the architect, and Mr. Nicholson, of Stanley, the contractor.

Shields.—The first stone of the new building at the Diocesan Training School was laid last week. These buildings will include a house for the principal, and accommodation for twelve additional pupils. The whole cost will be about 1,500*l.* It is expected that the works will be completed before Christmas.

Elgin.—Our old Trades' Hall, says the *Elgin Courant*, is now among the things that were, and within a day or two the foundation of the North of Scotland Bank buildings will be laid. The directors of the bank have sold a portion of their frontage space to the office-bearers of Trinity Lodge Assembly Rooms, who are to build forward, thus making the Assembly Rooms buildings a complete square, and enlarging the front to the High-street. It was proposed at first to have the front of the new bank 12 feet back from the street; but it has now been resolved to build forward to the street, in a line with the Assembly Rooms, thus forming, as it were, a continuation of the same building, and the whole is to be in one style of architecture. On the other side of North-street the foundation of the Royal Bank of Scotland buildings has been laid, but little progress has yet been made, owing to the scarcity of masons, who appear to have taken advantage of this small stir at Elgin to strike work for an advance of wages, but have resumed work on terms offered, though some had left for Keith and other places.

CHURCH-BUILDING NEWS.

Merton.—Alterations and additions are to be made at Merton Church; Mr. F. Digweed, architect. Tenders have been sent in ranging from Elliott, 899*l.* to S. S. Wilson (accepted), 624*l.*

Croydon.—The consecration of the Church of St. John the Evangelist, Croydon, took place on Thursday in last week. The building is in the Gothic style. It has been erected by voluntary contributions. The entire cost will be somewhere about 5,300*l.* including tower and steeple now erected. The tower forms part of the church, its window facing that of the communion-table. Over the latter is a stained glass window, to the memory of John, Earl of Eldon, who died in 1854, and Louisa his Countess, who died in 1852. The roof of the church is an open one, formed of oak. The whole of the interior walls are formed of Ashlen or Godstone stone: there is no plaster. The building is calculated to accommodate 350 persons.

Braintree.—A tender for the proposed church restoration works from Mr. Parmenter, of Bocking, builder (the only one sent in), was laid before the committee at a recent meeting, and, after a long discussion, some reduction having been assented to, was accepted, with an understanding that a portion of the works would be contracted for, and commenced as soon as the sum collected was deemed sufficient to warrant the committee in so doing.

Bury.—A painted window has recently been inserted at the east end of the south aisle of St. Mary's Church, to the memory of the late Mr. James Oakes. The window is of three lights, each light containing two subjects in panels. They are as follows:—The Entombment, the Resurrection, the Appearance to Mary (*Noli me tangere*), the Incredulity of St. Thomas, the Ascension, the Saviour in Glory. The ground of the window is ruby, with vine foliage in various shades of green and white. The ground of the subjects within the panels is deep blue, the border chiefly green and blue: the foliations of the upper part of the window are filled with angels playing on various musical instruments. The inscription runs at the base of the three lights. The subjects are drawn in accordance with the general style of the window, in imitation of the glass of the Decorated period. The artist is M. Gerente, of Paris, to whom the restoration of the painted glass of St. Denis has been entrusted. Some of his painted glass may also be seen in Ely Cathedral. Another compartment of the west window is about to be filled with stained glass.

Shirley.—The new church of St. John the Evangelist, Shirley, was consecrated by the Archbishop of Canterbury on Thursday in week before last. The new church was erected by Mr. Harris, of Croydon, from the designs of Mr. Scott. It is in the Early Gothic style, and is situated immediately to the east of the old building. The new edifice consists of a centre and two side aisles, a nave, and a chancel. Close to the entrance is the font. It is composed of red and grey Cornish marble, from the Lizard Serpentine Company, and is about 3½ feet in height. The

seats are of oak, and are covered with uniform carpeting (specially made by Lapworth). The interior walls are of ashlar work, and the arches of stone of alternate colour. The chancel is large and lofty, and from either side project the pulpit and the reading-desk. The east window, by Mr. Oliphant, was erected in memory of the late Lord and Lady Eldon. The window is of considerable height and width, and is composed of five large panes of glass, the centre one of which represents the Ascension, the two left the Crucifixion and the Agony in the Garden, and the two right, the Resurrection and the Entombment. The pulpit is of carved work. The seats (for 350 persons) are open, and uniform throughout, and all face the east. The flooring is of tesselated pavement.

Tiverton.—St. Peter's Church, Tiverton, was reopened on Thursday in week before last, after the completion of restoration works which have occupied nearly three years. In 1852 a committee was formed for rebuilding a great part of the fabric, and Mr. Ashworth, of Exeter, architect, was called upon to survey and report on the condition of the church, and shortly afterwards to prepare plans for reconstructing with enlargement the greater part of the edifice, the cost to be wholly defrayed by subscriptions. Contracts were entered into early in 1853 with Messrs. Gath and Williams, builders, and Mr. Parish, statuary, of Tiverton, for carrying out the plans, consisting of a new north aisle, 121 feet by 23 feet, from which opens a new organ-chamber, 15 feet by 31 feet, and corresponding with Greenway's chapel on the south side: adjoining the organ-chamber is a vestry. Whilst these works were being executed the construction of the nave and clerestory on new piers and arches of Farley Down stone, amounting to a literal restoration of the old, proceeded. In 1855 a great part of the south aisle walls were rebuilt, and an oak roof, copied from the artistic but decayed remains of the original construction, was completed. The tower underwent an extensive repair: the ruinous buttresses, strings, sculptured devices, &c. were replaced with new material. The west window has also been filled with painted glass. The rebuilding of the chancel, almost entirely, was not commenced till the present year. The original design has been improved upon by the introduction of a flooring to the sacrarium and a reredos of Minton's tiles under the east window, which is shortly to be fitted with painted glass, representing the Ascension, by Mr. Wailes. The whole of the church is now roofed with English oak, and the roofs covered with lead on double boarding. The north aisle pews are of new wainscot oak. The nave and south aisle have the former seating cut down and arranged to a suitable height with increased substance. There is a new pulpit in Caen stone. The church as now arranged is calculated to seat 1,060 persons.

Saltney.—In consequence of the rapidly-increasing population of Saltney, an increase in the accommodation for public worship was found to be requisite, and about six months ago the Wesleyan body commenced the erection of a chapel, which was opened on 29th ult. The cost of the building was about 700*l.* giving accommodation to 300 hearers. Mr. Penson was the architect, and Mr. Hitchen the builder.

Chorley.—On the 4th inst. the ceremony of laying the corner-stone of the cemetery chapel belonging to the Roman Catholics took place. Mr. Banks and Mr. Chester, the contractors, Mr. Derham, architect, Mr. Jowett, and other officials, were present.

Ashborne.—Okeover Church is now undergoing a complete restoration, at the sole expense of Mr. H. C. Okeover, from designs by Mr. Scott. The details of the restoration are a high pitched roof, a new porch on the north side, a carved chancel screen, and the whole building to be furnished with open seats in oak. The contractor is Mr. W. Evans, of Ellaston.

Edinburgh.—The town council have resolved to conclude the purchase of a site for the re-erection of the old stones of Trinity College Church, at Calton-hill Stairs, in the parish of South Leith.

Hamilton. — The mausoleum at Hamilton Palace is now approaching completion. The floor of the chapel has been inlaid with marble mosaic. The immense circular glass slab that crowns the dome, broken by a storm in February last, has been replaced. The ground environing the mausoleum has been terraced, levelled, and laid out.

RAILWAY MATTERS.

North Eastern,—Auckland Branch. — For the following details as to some of the principal works on this new branch line, we are indebted to the *Gateshead Observer*:—Starting at Leamside, where the new station will stand between the trunk and the branch, the latter line runs its course for Durham, and reaches the Wear at a distance of about a mile and a quarter, crossing the river at a height of 130 feet, by the Belmont viaduct, 694 feet long, and having nine arches of 60 feet span and 31 feet rise. The "high seam" of coal had been worked, on both sides of the river, by mines of whose operations no records exist. The ancient workings were carefully explored, and built up with brickwork, set in Roman cement. The masonry of the viaduct is of "rock-work." The interior of the arches is of brickwork, the bricks being made on the spot by steam machinery. The structure of the viaduct comprises,—250,000 cubic feet of ashlar, 119,000 cubic feet of rubble, 34,600 cubic feet of brickwork, 97,200 cubic feet of dry-filling over the arches. The Durham viaduct is the second great work on the line, and is of similar material and workmanship to the Belmont, with a Norman corbel table and parapet. It is 832 feet long and nearly 100 feet high, and crosses the new north road and the mill-burn. Its arches, eleven in number, are of the same span and rise as those of the rival viaduct. It was a most difficult task to obtain a sufficient foundation for this structure. Piles of great length were driven through peat-moss, quicksand, &c. by steam-power: the spaces between the piles were filled with concrete; and a framing of timber, laid upon the piles, carries the superstructure. The Durham viaduct, standing upon 21,300 feet of piling, contains 184,500 cubic feet of ashlar, 56,000 cubic feet of brickwork, 140,000 cubic feet of rubble, and 142,000 cubic feet of dry filling.

Bawtry Viaduct, on Great Northern.—The viaduct carrying the Great Northern over the Idle, a short distance beyond the station at Bawtry, is to be taken down and replaced by one of brick piers, supporting iron girders. The present viaduct is entirely of wood, and nearly a quarter of a mile in length. The contract has been given to Messrs. Holme, of Liverpool (who erected the plant works at Doncaster), for upwards of 15,000*l.* The time required to complete it will be thirteen months; beyond which period the Messrs. Holme are liable to a very heavy penalty per day. It is calculated that nearly 100 men will be employed; and 2,000,000 bricks also required to raise the projected piers, of which there will be sixty-five. The work is to be commenced forthwith.

Railway through London.—A new prospectus has been issued of the Metropolitan Railway, a project for some time before the public. The line will be 4¼ miles in length, connecting the London stations of the Great Western, North Western, and Great Northern with the General Post-office, and is to be below the level of the existing streets. Of the capital of 1,000,000*l.* the Great Western Company are to take 175,000*l.* and the Great Northern Company 175,000*l.* leaving 650,000*l.* of which 150,000*l.* have been for a considerable period subscribed by the public. The remaining 500,000*l.* was subscribed and paid upon by the promoters; but these are now to be put forth to new applicants, under a guarantee of 6 per cent. from Mr. J. L. Ricardo, on condition of an equal division of all surplus profits. This guarantee will be secured by 100,000*l.* deposited by Mr. Ricardo in the London and Westminster Bank.

Railway Earnings.—The traffic on railways for the past half year exhibits a remarkable increase, and has resulted in an extraordinary rise in the value of this long-depressed property. Thus, the London and North-Western, with 553 miles of railway, has earned 70,000*l.* more than in the corresponding period of last year; Lancashire and Yorkshire, with 253 miles, 61,000*l.*; London and South-Western, with 258 miles, 52,000*l.*; Great Western, with 319 miles, 55,000*l.*; Midland, with 498 miles, 49,000*l.*; Great Northern, with 283 miles, 40,000*l.*; South-Eastern, with 290 miles, 38,000*l.*; North-Eastern, with 682 miles, 34,000*l.*; London and Brighton, with 173 miles, 33,000*l.*

Iron and Gutta Percha Carriages.—Somebody in Albany, says an American paper, is getting up a railroad car out of wrought iron and gutta percha. Such a car, it remarks, can be jammed but not broken: it may smash up, but can make no splinters, nor can it lacerate limbs.

Cast-iron Sleepers.—We are informed, says *Herapath's Journal*, that the report of the engineers on the cast-iron road laid in the years 1850 and 1851 (when iron was at a very low price), to the extent of 200 miles in England and Ireland, on Barlow's patent, are highly favourable. Wherever they were laid with new rails, amounting to ninety miles on the South-Eastern Railway, and above 100 miles on other lines, the experience is said to be satisfactory. In countries like India, where timber is expensive, and liable to rapid destruction, this system, it is expected, will be extensively adopted.

RECENT PATENTS.

THE following are selected from the lists regularly published in the *Mechanics' Magazine*:—

Page, H. C. An improved method of indurating marble and stone, and of permanently fixing colours therein, with variegated pattern, &c. (No. 2478). To indurate light-coloured stone and marble, the patentee proceeds as follows:—With a soft brush or sponge he wets the surface with a solution of two parts of lime and one pearl-ash: he then exposes the stone to a gradual heat until it is dried through, and has become sufficiently hot to melt white bees-wax, which he next passes quickly over the surface. The process for producing a variegated pattern or device in colours on marble and stone is as follows:—The surface should be clean and fine, but not polished, and the colouring matters are applied according to taste, after which the stone is subjected to a sufficient degree of heat to melt wax, and when wax is so applied the colouring matters become perfectly fixed.

Daines, J. B. An improved mode of treating surfaces of stone, plaster, and cement, for the preservation of the same from decay (No. 1765). This invention consists in coating surfaces of stone, plaster, and cement with a solution formed of one part (by weight) of sublimed sulphur and eight of linseed or other oil. The mixture is placed in an earthen vessel, and heated in a sand-bath to from 226 deg. to 278 deg. Fahrenheit, when the sulphur dissolves. The solution is laid on with a brush. *** The filing of this specification was delayed for more than a year in consequence of opposition.

Gilbee, W. A. Improvements in the application of silicate of potash to hardening and preserving stones and calcareous materials (No. 2343). This invention consists—1. In the process of impregnating stone and other calcareous materials with a solution of silicate of potash. 2. In determining the different degrees of strength to be given to the solution of silicate of potash. 3. In the means of drying the stone, either before or after the saturation, to insure a favourable result.

Hill, D. Preparing a material capable of resisting fire, and especially suitable for the interior of puddling and other furnaces (No. 2085). This invention consists in combining and melting limestone with ironstone, or with the cinder from puddling furnaces, or from ball-mill furnaces, and in running the same in moulds or otherwise.

Bessemer, H. Improvements in metal beams, girders, and tension bars, used in the construction of roofs, floors, and other parts of buildings, and in the construction of viaducts, and suspension and other bridges (No. 2323). The patentee puts refined or pig-iron into a puddling furnace, and there works it in the usual way, but leaves off the operation of puddling before the whole of the carbonaceous matters are driven off; or the metal may be puddled until the whole of the carbon is driven off, and the powdery iron resulting be afterwards converted into steel by cementation. Or the iron may be otherwise decarbonized and reduced to steel. In either case the metal is brought to a complete state of fusion in pots like those used in the melting of steel. The metal having been melted, he casts it into beams or girders, which are afterwards annealed; but when beams, girders, or tension bars are required of great length, or are to be very light in proportion to their dimensions, he casts the fluid metal in iron ingot moulds, and afterwards rolls the ingot to the desired thickness.

Taylor, W. An improvement or improvements in the manufacture of iron (No. 2439). This invention consists in treating iron at that stage of its manufacture in which cast iron is converted into wrought iron. The cast iron is introduced into the puddling furnace, and melted and puddled until it acquires a pasty consistence, and then discharged into a vessel of water. The iron is thus cooled in the shape of a spongy mass, the water at the same time preventing its oxidation by the air. The iron after being removed from the water is reduced to a powder, by being passed through rolls or otherwise, and the powder is separated into portions of different degrees of fineness by sifting. The several powders are then washed, and each portion is separately treated in a furnace, in which the iron is balled. The several powders produce iron of different qualities, the finest producing the best.

Swinburne, T. J. Improvements in furnaces or

apparatus used in the manufacture of glass (No. 2429). Claims.—The constructing of furnaces or kilns for annealing glass with flues or tunnels under their floors, and in the side-walls, for the purpose of admitting the passage of air through them, and causing the furnaces or kilns and their contents to be more rapidly and uniformly cooled.

Burridge, G. Improvements in the preparation of glass for ornamental purposes (No. 2481). By his process the patentee proposes to colour the glass on both sides, each side of a different colour, or he employs two sheets of glass of different colours, pressed together or otherwise united.

Tritton, H. An improved safety-apparatus for the protection of persons while painting the exterior of buildings and cleaning windows, which may be used as a balcony for holding flowers (No. 2387). This invention consists of a portable apparatus which may be readily affixed to a window, so constructed as to be perfectly safe for a person to stand upon, and so guarded as to render it impossible for any accident to occur by falling.

Platt, J. and J. Whitehead. Improvements in machinery or apparatus for preparing clay for the manufacture of bricks (No. 2389). Several arrangements for dividing "crude" or untempered clay into small particles, and for separating stones or other hard materials therefrom, are described by the inventors.

ARCHITECTURE AT UNIVERSITY COLLEGE.

THE distribution of prizes at University College, London, for the Session 1855-56, took place on Thursday, the 3rd of July, when Colonel Sykes, chairman of the East-India Company, presided. Professor Donaldson announced the awards as follows:—Fine Art, first year's class,—prize — George Mills, of London; certificates, E. Ransom, of Ipswich; John S. Daintree. Second year's class,—prize—Edward Lawrence; certificates, A. L. Spencer, W. F. Hooper. Construction, first year's class,—prize—Edward Ransom; certificates, James Schofield and George Mills. Second year's class,—prize—Alfred Spencer; certificates, E. Lawrence, W. H. Hooper.

Miscellanea.

GLASS.—Mr. Lavers has just prepared a very large window, in five lights and tracery, for the new church building at Umballah, East Indies. It contains illustrations of the Conversion of St. Paul, St. Paul healing the Cripple at Lystra, St. Paul preaching to the Athenians, the Raising of Eutychus, and the Imprisonment with Luke. These are large cartoons under canopies, with richly coloured general background and tracery. The church is nearly finished, and will be the largest and most handsome, it is said, in India.

THE EDINBURGH SCHOOL OF ART.—The prizes for the competition drawings, paintings, and models of the students attending the School of Design, under the auspices of the Board of Manufactures, were distributed at the National Gallery, in Edinburgh, on Monday in last week. Lord Murray occupied the chair, and the meeting was attended by many of the principal citizens of Edinburgh, from the Lord Justice General downwards. Mr. A. Christie read the report on the department of architecture and ornament, which stated that the number of students who attended the classes in this department during the session was 411, and the number during the previous session 314; showing an increase of 97. Among the students were—painters, 14; sculptors, 3; architects and engineers, 30; draughtsmen, 4; engravers, 6; house-painters, 8; ornamental painters, 1; general engravers, 10; ornamental engravers, 3; wood carvers, 16; glass stainers, 6; brassfounders, 3; joiners and cabinetmakers, 7; marble cutters and stone-carvers, 3; mechanical engineers, 3; pupil teachers, 37; schoolmasters, 3—total attendance on the male classes, 231. In the female classes there were—amateurs, 87; schoolmistresses, 20; and pupil teachers, 73—total female pupils, 180. The class for practical architecture had suffered from the severe illness of Mr. Christie during the winter, and the drawings were therefore few in number; but during the vacation the students in this class had executed a number of drawings, which Mr. Bryce examined. The report adverted to the want of accommodation in the present rooms. A report by Mr. Bryce was appended, in which that gentleman recorded his approbation of the whole of the drawings in the department of practical architecture. Mr. R. S. Lauder read the report of the antique and life departments. During the session, the number of students in these departments had amounted to ninety. In the antique, the progress of many of them had been very gratifying, and in general was very good. Lord Murray distributed the prizes.

BRITISH SCULPTORS AND COMPETITION.—In reply to Lord Panmure, who remarked, as we have already mentioned, that,—"As to public competitions the noble earl (Harrington) must be aware that the sculptors and artists of this country declined to furnish plans to compete for the erection of monuments,"—the veteran sculptor, Mr. E. H. Bailey, says,—"Can Lord Panmure, Lord Harrington, or any other noble lord, say there was want of response by the British artists for the Nelson Testimonial? Or, can it be said that British architects declined to compete for either the erection of the Parliament houses, or, more recently, for their decoration? Did they not cordially reply to the invitation of the City in the cases of the Peel and Wellington competitions? And lastly, did not two British sculptors out of four selected (one being a foreigner and the other Mr. Gibson) submit designs for the Government Wellington Monument, and, although rejected, offer again and again to provide other works? I, for one, never heard of the Scutari monument until I read in the public papers that it was completed, and I may say that, had I been applied to, I should most readily have met the views of the Government, and have been proud to have done so for the honour of England's arms and art."

ENGLISH DRAINING TILES IN FRANCE.—The *Moniteur* states that the Minister of Finances has decided that the machinery for the fabrication of drainage pipes, which hitherto has paid the entrance duty of machinery coming under the common head of steam-machinery, a duty equal to from 20f. to 25f. per kilogramme, shall henceforth be admitted under the head of agricultural machinery (15f. per kilogramme), whatever may be the weight of the machinery in question; but at same time that the machines for breaking the ground or for preparing it to be made into pipes, or any other accessory machines that do not form part of a complete set of machinery for the fabrication of drainage pipes, shall continue to pay the same entrance duty as machines coming under the head of steam machinery.

THE BRIGHTON BRANCH ASSOCIATION FOR IMPROVING DWELLINGS.—The report of the managing committee of this association states that it is most gratifying to them, on this fourth occasion of meeting the shareholders, to be able to confirm the favourable prospects held out in the last report. The net income since 31st March, 1855, to the same date in this year, after deducting rates, taxes, and all other expenses, amounts to 220*l.* 4s. 1d. From this source the committee recommend a dividend (free of income tax) as follows,—20s. per share payable on all shares excepting to shareholders who have only become such after March, 1855, and to these that a dividend be paid of 15s. and 10s. according to the respective quarter in which the 25*l.* per share has been paid. The committee wish to have it in their power, by an influx of new shareholders, to extend the benefits of this benevolent and useful association. At present there are two blocks of dwellings, one for twenty families and one for fifteen families and five single women. The whole has been constantly tenanted since the opening, and the health of the inmates has been excellent. A washhouse, with suitable coppers, &c. is about to be erected (in the yard in Church-street) for the comfort and convenience of the tenants in both the buildings.

ELECTRO-TELEGRAPHIC PROGRESS.—In course of some experiments with a telegraph invented by a Mr. Duncker, two distinct messages are said to have been sent by the same wire, and read off in an incredibly short space of time. Mr. Duncker has successfully tried his invention on a Prussian government line, and on a subterraneous line of 160 miles in England. The invention is said to be applicable to existing arrangements. It is calculated that the adoption of it would enable the telegraph companies to transmit messages at one-fourth of the usual rates, and with more chance of despatch. As remarked by the *Gateshead Observer*, it would be more correct, perhaps, to say, that while the wire transmits one message, the earth transmits the other; but, practically, one wire is made to do the work of two.

MECHANICAL SCIENCE.—A new feature of attraction has lately been added to the machinery department of the Crystal Palace. It consists of a series of lectures by Mr. Partington, illustrative of the labour-saving machinery of Messrs. Muir and Co. of Manchester. A shaping and planing machine was exhibited on Monday last. Rough blocks of iron were submitted to its action, which acquired, at the will of the operator, almost any imaginable form.

TIMBER-BENDING.—Among the new companies which have started into existence under the vivifying rays of the Limited Liability Act, we observe one for introducing to the English public an American patent for bending timber after a fashion, which, by causing the fibres to interlace, increases the strength of the wood, and, by pressing out the sap, seasons it in the course of an hour or so.

THE CENTRIFUGAL THEORY OF THE MOON.—To this theory we again for a moment revert, in order to adduce a new corroboration of its verisimilitude, which has just occurred to us, from astronomical facts or phenomena till now unaccounted for,—as the hovering of stars on the lunar disc while passing behind it had hitherto been. If the moon really have an atmosphere, with vaporous clouds and other aqueous forms, all centrifugalized to its exterior hemisphere under the influence of the revolving or centrifugal force, as it must act on and oblongate a sphere such as it is, always presenting, as it does, one and the same face or hemisphere away from the centre of its revolution,—can it be that the earth is *never* so situated in relation to that hemisphere, that atmosphere, *and these clouds*,—thus for ever, doubtless, placed beyond the *straight line* of our visible presence,—that, at all events, by some reflexion or refraction of light from the latter, as they float in the lunar atmosphere, these lunar clouds may, at least for a moment or so, become distinctly and actually visible to the earth's inhabitants? In such a case as that of a total eclipse of the sun, for example, by the intervention of the moon between it and the earth, ought not some of the lunar clouds to *appear* by refraction, as coloured streaks, *above* and around the black disc of the moon, and amid the ring of solar light thus left? Now, what else can those auroral or flame-hued, roseate, fantastic, and heretofore unaccountable streaks be which, in fact, *do* appear, above and around the black lunar disc, in the midst of the solar total eclipse, and which have hitherto excited so much astonishment and unrewarded curiosity amongst astronomers of all nations? Can these ruddy streaks be anything else than auroral cloud refractions from the lunar atmosphere, seen above and around the horizon of the hither side of the lunar ball, in a way not unlike those false (yet true) appearances, or simulacra, of ships and towns, above the earth's own horizon, by refraction, while yet in reality completely beyond or below that horizon above which they thus appear? And if these strange auroral cloud-spun streaks shall really prove to be the mere refractions of the lunar clouds, as they float in the lunar sun-lit atmosphere for ever beyond the direct line of our terrestrial vision, who shall, in the face of such proof, any longer doubt the existence of vegetable and even of animal and intelligent life on that far-off sunny side, as we may then poetically call it, of the lunar surface? That the *hovering* of stars ere they disappear behind the lunar disc, and the *appearance* of ruddy streaks just where these stars were known to hover, are both of them due to one and the same optical cause, and that cause the refraction of light in a lunar atmosphere behind and beyond its visible disc,—there seems to be very strong reason indeed to believe, apart altogether from the centrifugal theory which we have now broached,—the verisimilitude of which theory, however, both of these facts or phenomena seem clearly to corroborate, while they are themselves, reflexly, illuminated by its explanatory reasoning. It is precisely the chief merit of a new and truthful theory, that it affords satisfactory explanations of known facts or phenomena till then deemed inexplicable, or at least till then unexplained.

POSITION OF THE "COMMANDMENTS" IN CHURCHES.—The suit against the churchwardens of Tewkesbury, charging them with neglect in not putting up the Ten Commandments in the proper place, in conformity with the 82nd Canon, which had been pending since 1854, has been decided by the Judge of the Gloucester Consistory Court, C. J. Mark, esq. Tewkesbury Church, is an ancient abbey church, in which, it appears, service is performed only in the choir, separated at the east end from the outer wall by a stone screen distant from the outer wall about 22 feet: the Ten Commandments are not placed on the screen, but in an elevated position 22 feet beyond it. Formerly there was a second screen, 6 feet to the west of the stone screen, on which the tables of the Decalogue were placed; but in 1848 they were moved to their present position at the suggestion of the vicar. The Judge ruled that, as the Commandments in their present position might be read from different parts of the choir, the churchwardens, having found them in that position, had exercised a sound discretion in not removing them at the mere wish of a parishioner until the next Visitation, when they offered to act as the ecclesiastical authorities might direct; accordingly he dismissed them with their costs.

IRON, HARDWARE, AND METAL TRADES' PENSION SOCIETY.—A deputation, consisting of the Mayor of Sheffield, Messrs. Burton, Richard Stuart, and Joseph Nelstrop, waited upon his Grace the Duke of Norfolk, at the Farm, on Monday last, to present the resolutions of condolence, passed at a general meeting of the society, held at the London Tavern on the 30th ult. His Grace most cheerfully accepted the invitation of the society to succeed his late noble father and become its patron.

LABOUR IN CANADA.—The price of labour in Canada, notwithstanding the marked decline in provisions, remains steady, according to the *Canadian News*, at about the current rates of last year. Good carpenters receive 7s. 6d. to 8s. 9d.; and in some cases as high as 10s. Halifax currency, the 1s. being equivalent to 9½d. sterling; masons and bricklayers, 8s. 9d. to 10s.; common labourers, 5s. to 6s. 3d.; brickmakers, 6s. 3d. to 7s. 6d. per thousand; cabinet-makers about the same as carpenters, mostly by piece-work.

THE IRON TRADE.—It is not denied by the most eager upholder of prices, that they have very generally declined in the face of the quarterly resolve to maintain them at former rates, and these reductions are admitted to have gone even to the length of 20s. and 25s. a ton. The "settlement," too, of the prices, for the quarter, as it is called, is allowed not to have had the effect of bringing so many orders as were expected. The puddlers at the Elsecar Iron Works, unable to suffer the heat, have been shirking their work, and warrants to compel them to roast themselves alive having been issued against some of them, a general strike has been the result, 300 men having left the employment, which is therefore entirely at a stand. More roasting warrants have accordingly been issued, and fifteen of the puddlers are about to be brought to the stake.

MIDDLESEX INDUSTRIAL SCHOOL COMPETITION.—It may be well to mention that the Committee of Visitors selected the designs for the proposed Industrial School by Messrs. Aickin and Capes, Mr. George Henderson, and Mr. W. B. Moffatt, and awarded the premiums accordingly.

GAS.—From the voluminous accounts of the Liverpool Gas Company just published, it appears that the cost of producing the gas in 1855, was 66,968*l.* 3s. 3d.; the general expenses being 17,658*l.* The total receipts for the year, notwithstanding the decrease in the price of gas for six months, from 4s. 6d. to 4s. were 129,970*l.* 1s. 4d.; the total increase on the year being 5,858*l.* The increased consumption of gas during the year was 30,000,000 cubic feet. The shareholders will receive 10 per cent. dividend as usual, but the public, the directors hint, must not expect any further reduction for some time to come. They do not seem to want any more increases of 5,858*l.* per annum: indeed, this is actually the fact; they dare not divide more then 10 per cent. among them, and so have no farther interest in reducing the price, and thus increasing the profits.——It is in contemplation to erect new gas works on a more extended scale, at Chipping Norton, the present being found inadequate to supply the requirements of the town. ——At the annual meeting of the Kirriemuir Gas Company just held, the usual dividend of 8½ per cent. was declared payable on the 1st of August. As the rates paid for coal continued extremely high, it was said, no reduction in the price of gas was recommended at present.

NORWICH SCHOOL OF ART.—The annual distribution of prizes to the pupils of this institution took place on Thursday evening before last, at the school, the Mayor, Mr. J. G. Johnson, presiding. The walls were hung with the drawings and designs of the successful competitors, which were inspected with considerable interest by a number of the friends and supporters of the school. The Mayor, in opening the proceedings of the evening, said he was happy to state that at last the vexed question of the relations of the school with the corporation was settled: at their last meeting, the town council determined to make the school a corporate school, and, therefore, they might regard it as established so long as the corporation remained. The council had, moreover, pledged themselves to find the school a building, and they would shortly become their landlords. He trusted that the council would become something more,—their patrons; and that the example so liberally set by Mr. Chamberlin and Sir Samuel Bignold would be followed by succeeding mayors. It was always desirable to keep alive that love for art which distinguished a great and lasting, from an ephemeral people. To make a people something more than a mechanical, and pounds, shillings, and pence people, they must be made an artistic people, and that could only be done by an artistic education. Without depreciating former masters, he thought they had been fortunate enough to secure the services of gentlemen who had taken a lively interest in the welfare of the school: he would venture to say that no master had taken a more personal interest in the success of the students than Mr. Nursey. The Rev. A. B. Power read the report of the committee for the past year, which stated that the number of students had steadily increased in all the classes, and that a marked improvement was especially evident in the special ladies' class, which now comprised twenty-nine, against seventeen last year. The meeting was afterwards addressed by Sir S. Bignold, M P. who delivered the prizes, and by other gentlemen present.

ROYAL NAVAL FEMALE SCHOOL.—The establishment at Richmond having been found too small for the accommodation of the increasing number of pupils, the committee have been for a long time looking out for new premises, and at length have come to an arrangement for the purchase of St. Margaret's Mansion, on the banks of the Thames, and about seven acres of the adjoining land, from the Conservative Land Society, the directors of which, rather than pull down the edifice, have lowered their price on behalf of this excellent institution.

APPEAL CASE AS TO BUILDING UNDER WATER.—An appeal was lately heard in the House of Lords,—William Bush plaintiff in error; and Sir Charles Fox and others, defendants in error.—The proceedings were brought upon a judgment of the Court of Exchequer Chamber affirming a judgment of the Court of Exchequer in an action for the infringement of a patent, dated in September, 1841. The plaintiff, William Bush, claimed to be the patentee of an invention of "improvements in the means of, and in the apparatus for, building and working under water." What he claimed in particular was the mode of "constructing the interior of a caissoon in such a manner that the workpeople may be supplied with compressed air, and be able to raise the materials excavated, and to make or construct foundations for lighthouses and bridges." The defendants pleaded that the plaintiff was not the first inventor; that the invention was not a new manufacture, and that the invention was not a new invention as to the public knowledge thereof. The Lord Chief Baron, after testimony led, directed the jury to find for the defendants that "the invention was not one of any manner of new manufacture;" and the Court of Error sustained the direction and the finding. It was now contended that the fact of the new manufacture ought to have been left to the jury, and not made a matter of law by the judge, and that the working under water was sufficient to support the patent. The unanimous opinion of the judges was that the direction of the Lord Chief Baron was right. The plaintiff did not claim the foundations of piers or buildings, but the means of making them, and that was done by means of caissoons, according to the specifications of the patent granted to Lord Dundonald. The Lord Chancellor had no hesitation in advising their lordships to give judgment for the defendants in error. His lordship said he did not mean that the plaintiff might not, by a new specification, establish a title to an invention, but having claimed the air-tight caissoon, which was clearly the invention of another person, his present claim could not be sustained, for the action by means of these caissoons or chambers was precisely the same under water as under land. Judgment for the defendant in error.

FURNACE BRICKS.—Mr. David Hill, of Tipton, Staffordshire, has patented a material for resisting fire, consisting of limestone and ironstone, or the cinder from furnaces, melted together, and cast into moulds.

INSTITUTE OF BRITISH ARCHITECTS.—A special general meeting was held on Monday evening, the 14th instant, to consider and decide respecting the removal of the Institute from the rooms now occupied to certain localities named. No decision, however, was come to.

THE LATE MR. GEO. GWILT.—In your notice of my late brother (*Builder*, July 12), there is an error in the date of his birth, a correction of which, for accuracy's sake, you may like to correct. He was born on the 8th February, 1775, and therefore in his 82nd year.—JOS. GWILT.

TENDERS

For finishing a pair of houses, Hackney-downs, for Mr. West. Mr. J. H. Jones, architect:—

Dallas	£1,375 0 0
Mears	1,303 0 0
J. B. Hocken	1,272 0 0

For erecting two houses and gateway, Pownall-road, Dalston, for Messrs. Frith and Smith. Mr. John Young, architect:—

Dallas	£1,145 0 0
Smith	1,130 0 0
Wear	1,060 0 0
Harding	940 0 0
E. Mears	819 0 0
Cooper	799 0 0
J. B. Hocken	794 0 0
Cooper	792 10 0
H. Mears	770 0 0
Wood	744 0 0
Cheetham	710 0 0
Riley	680 0 0

For additions and alterations to Manila House, Peckham Rye, for Mr. J. Margetson. Messrs. Tillott and Chamberlain, architects. The quantities not supplied:—

Jennings	£1,034 0 0
Pritchard and Son	1,016 0 0
Brass and Son	997 0 0
Jas. Jones	990 0 0
Heath and Son	975 0 0
Wills (accepted)	873 0 0

For building the St. George's Schools, Battersea-park. Mr. Joseph Peacock, architect:—

Holland	£4,182 0 0
Wells	3,759 0 0
J. Wilson	3,700 0 0
Patman and Fotheringham	3,671 0 0
Piper and Son	3,586 0 0
Wilson (Pimlico)	3,333 0 0
Pollock and M'Lennan	3,248 0 0
Thompson	3,234 0 0
Woodruff	3,105 0 0
Harmer	2,994 0 0

For carcass of Scotch Church in the Harrow-road, Paddington. Mr. Barnett, architect. Quantities supplied:—

		Extra for Spire.
Myers	£2,580 0 0	£880 0 0
Pollock and M'Lennan	2,587 0 0	830 0 0
Higgs	2,620 0 0	630 0 0
Lawrence	2,270 0 0	396 0 0

For the Chesterfield, Tafton, and Calow cemetery chapels, lodge, reception-house, entrances, and boundary-walls. Messrs. Bidlake and Lovatt, architects, Wolverhampton:—

Miles Barber	£2,531 4 6
J. Rollinson	2,490 6 0
S. Walters	2,453 8 0
C. C. and A. Dennett	2,375 0 0
George Thompson	2,350 0 0
Peter Horner	2,305 0 0
Wm. Ferguson	2,290 0 0
Wm. Burkitt	2,177 0 0
Coates and Burrows (accepted)	2,166 0 0

For new church at Wheaton Aston, in the county of Stafford; the old materials in the present church allowed for the estimates. Same architects:—

	For Church without turrret and Spire.	For turret and Spire.
John Elliott	£1,200 10 0	£116 10 0
Messrs. Higham	1,105 0 0	85 0 0
Gilbert	1,056 0 0	136 0 0
Godfrey (accepted)	1,022 10 0	75 11 0

For new Educational Institute, Wolverhampton; the old materials of present schools allowed for estimates. Same architects:—

Messrs. Higham	£2,150 0 0
John Elliott (accepted)	2,104 0 0

TO CORRESPONDENTS.

"*Preservation of Stone.*"—M. I. B. A. says,—"I shall be much obliged to any who can tell me of a good mode of preserving soft stone in a building now erected, and of the probable cost of the process."—(One patented process is mentioned in our present number. The result of *experience* faithfully told is what we want.)

"*Scagliola.*"—"I want to know the method and what materials are mixed with Keene's cement besides colouring matter to form scagliola, so as to polish it; or give me directi ons as to what work I can find such information in. I mix Keene's cement and colouring matter with quarter of an ounce of isinglass dissolved in half-pint of water, with a small quantity of muriate barytes; when dry, rub it down with pumice very fine, but cannot polish it with tripoli and oil. Any information will oblige.—D. W."

"R. T. B."—"Mr. A."—"C. and A. G."—"T. O."—"W. J. G."—"Jacobin."—"T. J. R."—"J. P. D."—"S. H."—"G. P."—"Sir W. J."—"W. F. H."—"J. W."—"J. L"—"W. B"—"T. P."—"D. J. H."—"J. M. W."—"Rev. A. S." (apply to the architect).

ERRATUM.—In the article on Reigate, in our number for July 5, for "Canning Town," near the Redhill Junction, read "Warwick Town."

"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

MONEY.—A Gentleman has several THOUSAND POUNDS to LEND, on HOUSE PROPERTY, or other good security.—Apply, with particulars, to Mr. LYNE, Solicitor, 12, Pancras-lane, City.

TO BORROWERS.—LOANS GRANTED on HOUSE PROPERTY, on New and Advantageous Terms.

1. Advances granted from 100*l.* to 5,000*l.*
2. No Legal Expenses payable to Lender's Solicitor.
3. Repayment on Building Society System, and moderate.
4. Redemption, or Exchange of Securities, easy.
5. The Term of repayment protracted or shortened in certain cases.
6. No Fines.

Sums received, at deposit, at 5 per cent. interest, payable half-yearly.—Apply to the British Equitable Investment Company, 47, King William-street, London-bridge.

Incorporated. Capital, 100,000*l.*

W. S. GOVER, Managing Director.

MONUMENTAL BRASSES, SEALS, DIES, &c. in Mediæval and modern styles.—T. MORING, Engraver and Heraldic Artist, 44, High Holborn.

TO BE SOLD, cost 250 Guineas, a splendid MONUMENT by WESTMACOTT. May be obtained reasonably, on applying to Mr. GILLINGHAM, Builder, 26, Gough-street, Gray's-inn-road, from ELEVEN till TWELVE each day.

TO ARCHITECTURAL STUDENTS and OTHERS.—TO BE SOLD, for 15*l.* a COLLECTION of TRACINGS and DRAWINGS of Churches, Chapels, Villas, Plans, Gothic Tracery, and numerous Working Drawings, the collection of an Architect, together with an enclosed Press of Shelves for holding the same, forming a nice piece of furniture for an office.—Address, G. L. Mr. Birch, Bookseller, Kensington.

TO PAINTERS, BUILDERS, &c.—LIVETT, FRANK, and SON, No. 14, Borough, London-bridge, opposite the Brighton and South-Eastern Railway Stations, quote their present prices for cash—Linseed oil, 2s. 10d.; boiled, 3s.; turpentine, 2s. 8d.; oak varnish, 7s. 6d. per gallon; genuine white lead, 33s.; seconds, ditto 31s.; best town glue, 43s. per cwt.; colours, brushes, &c. equally low.